

R A P P O R T

BETREFFENDE

een voorloopig onderzoek naar den toestand van de Visscherij en de Industrie van Zeeproducten

IN DE

KOLONIE CURAÇAO,

ingevolge het Ministerieel Besluit van 22 November 1904

UITGEBRACHT DOOR

Prof. Dr. J. BOEKE,

HOOGLEERAAR AAN DE RIJKS-UNIVERSITEIT TE UTRECHT.

Tweede Gedeelte.

Bijlage 1.

I N H O U D.

1. Report on the fishes, collected by Dr. J. BOEKE, in the Dutch West Indies, 1904—1905, with comparative notes on marine fishes of Tropical West Africa, by J. METZELAAR, biol. docts., Amsterdam.

Bijlage 2.

2. Stalk-eyed Crustaceans of the Dutch West Indies, collected by Dr. J. BOEKE, 1904—1905, by MARY J. RATHBUN, assistant Curator of Marine Invertebrates, U. S. National Museum, Washington.

Bijlage 3.

3. Isopod Crustaceans of the Dutch West Indies, by HARRIET RICHARDSON, collaborator, U. S. National Museum.

GEDRUKT OP LAST VAN DEN MINISTER VAN KOLONIËN
BIJ FIRMA F. J. BELINFANTE, VOORHEEN A. D. SCHINKEL, 's-GRAVENHAGE

— 1919. —

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KONINKLIJKE BIBLIOTHEEK



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REPORT

OF THE

COMMISSIONERS OF THE

LAND OFFICE

IN RESPONSE TO A RESOLUTION OF THE

LEGISLATURE

PASSED JANUARY 18, 1887

AND A RESOLUTION OF THE

LEGISLATURE

PASSED FEBRUARY 18, 1887

AND A RESOLUTION OF THE

LEGISLATURE

PASSED MARCH 18, 1887

AND A RESOLUTION OF THE

LEGISLATURE

PASSED APRIL 18, 1887

AND A RESOLUTION OF THE

LEGISLATURE

PASSED MAY 18, 1887

AND A RESOLUTION OF THE

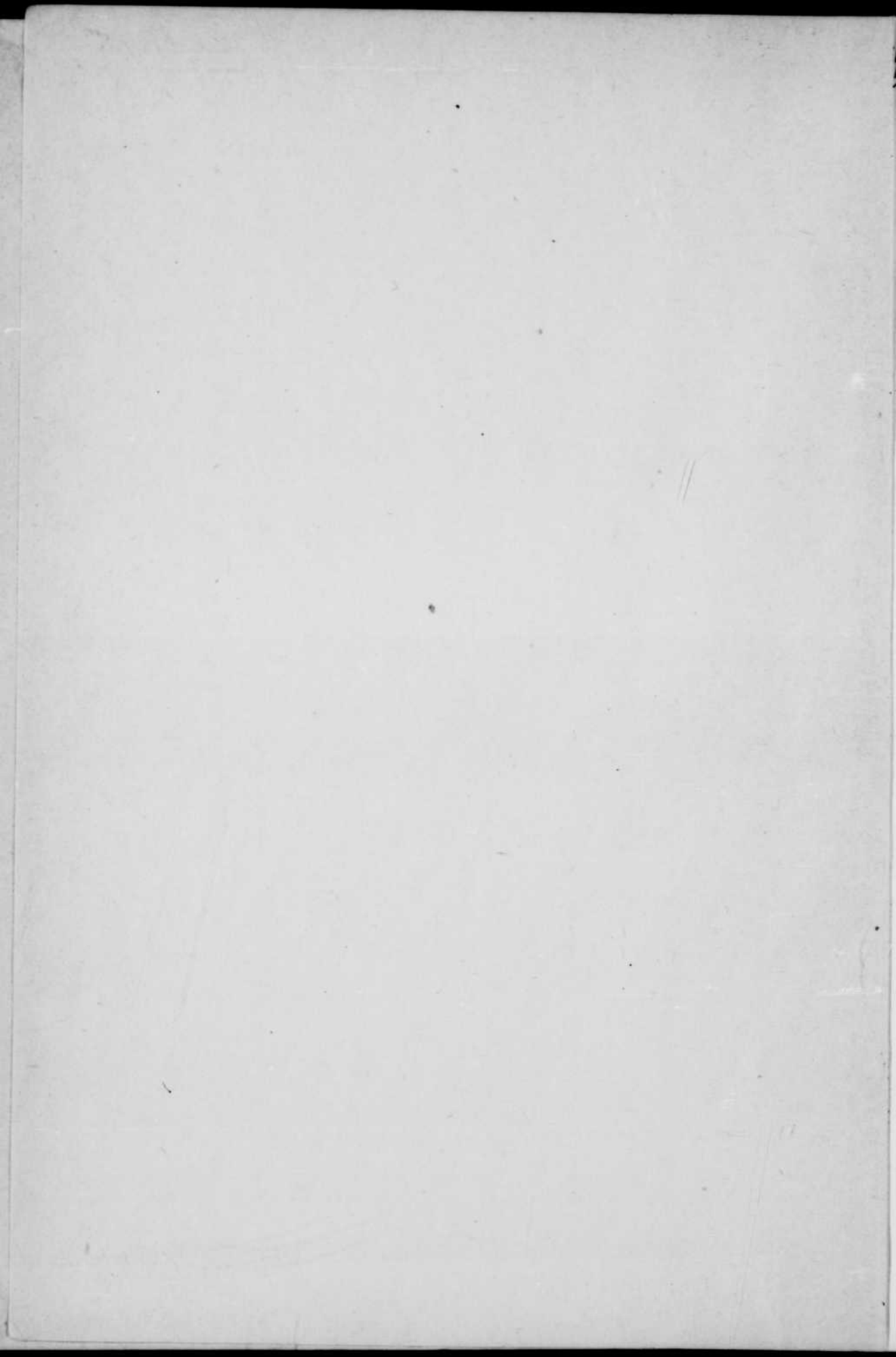
LEGISLATURE

PASSED JUNE 18, 1887

AND A RESOLUTION OF THE

LEGISLATURE

PASSED JULY 18, 1887



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INHOUDSOPGAVE.

INLEIDING	pag. III—V
De marine fauna van Curaçao	VII—XXIX
Algemeene beschouwingen	XXXI—XXXIV
Report on the fishes collected bij Dr. J. BOEKE in the Dutch	
West Indies 1904—1905 by J. METZELAAR	1—316
Part I. West Indian Fishes	1—179
Part II. Marine Fishes of tropical West Africa	181—299
List of literature cited	301—304
General index	305—315
Stalk-eyed Crustaceans of the Dutch West Indies by MARY	
J. RATHBUN	317—349
Isopod Crustaceans of the Dutch West Indies by HARRIET	
RICHARDSON	350.



INLEIDING.

In het eerste gedeelte van dit rapport, in 1907 verschenen, werden de algemeene resultaten van het door mij in opdracht van Z. Exc. den Minister van Koloniën, in de kolonie Curaçao verrichte visscherij-onderzoek beschreven, en de meer direct voor de praktijk en voor de ontwikkeling van het visscherij-bedrijf in de kolonie belangrijke gegevens medegedeeld. De toestand, waarin de visscherij op de verschillende eilanden zich bevond gedurende het jaar van mijn onderzoekstochten, (1904—1905), het verband dier visscherij met de eigenaardigheden, stroomverhoudingen, diepte, bodemgesteldheid enz. van de wateren, die de eilanden onzer kolonie omspoelen, en met de sociale toestanden op die eilanden en in de aangrenzende staten, de uitzichten op verbetering van het bedrijf, dat alles vindt men in het eerste gedeelte van dit rapport uitvoerig behandeld.

De marine fauna zelf kon ik evenwel in dat eerste gedeelte slechts in groote trekken behandelen, daar een nauwkeurige beschrijving van de voor het visscherijbedrijf in zijn verschillende onderdeelen belangrijke zeedieren, die in de wateren rondom onze eilanden voorkomen, slechts mogelijk was na de bewerking van de verzamelingen, gedurende het onderzoek bijeengebracht. Men vindt dus in het eerste deel van het rapport een globaal overzicht van de vischfauna, waarin vooral die families en soorten werden vermeld, die het hoofdbestanddeel van de dagelijksche vischvangst op de eilanden uitmaken, benevens een meer uitvoerige beschrijving van de wijze waarop deze verschillende vischsoorten worden buitgemaakt en statistische opgaven omtrent de hoeveelheden, waarin die soorten aan de markt worden gebracht, voor zoover ik die gedurende mijn onderzoek kon vaststellen. Een bespreking van de volksnamen, voor deze voornaamste voedselvisschen op de verschillende eilanden van onze kolonie in zwang, werd daaraan toegevoegd.

Thans is echter de volledige beschrijving van de gedurende het onderzoek ter plaatse verzamelde vischsoorten gereed gekomen. Het bleek niet gemakkelijk te zijn, een deskundige te vinden, aan wien de bewerking van dit omvangrijke materiaal kon worden opgedragen. Eenige mislukte pogingen leidden slechts tot tijdverlies. Ten slotte werd in den Heer J. METZELAAR, biol. doctorandus te Amsterdam, een bewerker gevonden, die zich op uitnemende wijze van zijn taak heeft gekweten, en aan wien hiervoor groote dank verschuldigd is. De afbeeldingen van nieuwe, zeldzame of anderszins belangrijke vormen werden vervaardigd door den Heer OBBES, die reeds in de afbeeldingen van de visschen van Oost-Indië in het groote werk van Prof. Weber en Dr. de Beaufort, zoo schitterende proeven van zijn bekwaamheid had gegeven.

Dank zij de welwillende medewerking van deze twee deskundigen, en niet het minst dank zij de goede zorgen van Prof. MAX WEBER, die het werk van den Heer Metzelaar controleerde en hem waar dit noodig mocht zijn, steeds met raad en daad terzijde stond, is de ondergeteekende dus in staat, in dit tweede gedeelte van het rapport een beschrijving van de marine vischfauna van de wateren rondom de eilanden onzer kolonie Curaçao aan te bieden die wel niet op volledigheid aanspraak kan maken — dit zou na één jaar verzamelen wel niet mogelijk kunnen zijn — doch die toch in uitvoerigheid en nauwkeurigheid en in het groote aantal der beschreven soorten de vergelijking met de van Amerikaansche zijde verschenen beschrijvingen van de marine fauna van aangrenzende gebieden alleszins kan doorstaan, en die een goede en bruikbare handleiding kan vormen voor toekomstig vergelijkend visscherij-onderzoek.

Naast de visschen zijn het vooral de crustaceae, de kreeften, krabben en garnalen, die voor de visscherij van belang zijn (men vergelijke hierover het eerste gedeelte van dit rapport). Miss M. J. RATHBUN, conservatrice van het Museum in Washington, was zoo welwillend de bewerking van het voornaamste gedeelte dezer collectie op zich te nemen. Haar rapport is naast het werk van den Heer Metzelaar aan dit tweede deel toegevoegd. Een klein gedeelte van het in de West verzamelde crustaceën-materiaal, tot de groep der Alpheidae behorende, kon door haar niet worden bewerkt, daar de ter vergelijking noodige exemplaren van de soorten dezer groep uit het museum van Washington zich in Parijs bevonden. Dr. COUTIÈRE uit Parijs nam de bewerking van de tot deze groep behorende vormen op zich, doch na het uitbreken van den

oorlog hoorde ik, ook bij herhaald navragen, niets meer omtrent deze collectie en hare bewerking. Ik heb dus gemeend, niet langer hierop te moeten wachten, doch dit rapport zonder de beschrijving van de Alpheidæ te doen verschijnen. Wellicht bestaat er later nog wel eens de gelegenheid, de beschrijving van de tot deze groep behorende vormen uit de collectie, indien ik haar nog van Dr. Coutière mocht ontvangen, te laten volgen.

Een volledig stel exemplaren van de verzamelde diersoorten werd geschonken aan het Rijks Museum voor Natuurlijke Historie te Leiden, een ander stel exemplaren aan het Zoölogisch Museum te Amsterdam, terwijl enkele dubbele exemplaren op verzoek van den staf van het Nationaal Museum te Washington aan dat Museum werden afgestaan.

Naast een woord van dank aan allen, die hun medewerking verleenden voor het tot stand komen van dit rapport, zij het mij vergund, mijn eerbiedigen dank te betuigen aan Z. Excellentie den Minister van Koloniën, voor de welwillende beschikking, waardoor het verschijnen van dit tweede gedeelte van het rapport met tal van afbeeldingen werd mogelijk gemaakt.

LEIDEN, JULI 1918.

J. BOEKE.



De marine fauna der kolonie Curaçao.

Zooals reeds in de inleiding tot dit rapport werd vermeld, zijn de beschouwingen omtrent de marine fauna van de wateren, die onze Beneden- en Bovenwindsche Eilanden omspoelen, in de volgende bladzijden neergelegd, voornamelijk gebaseerd op de zeedieren (visschen, kreeften, krabben en garnalen), verzameld gedurende mijn verblijf in de kolonie in het jaar 1905. Voor de wijze waarop de dieren werden verzameld, de netten, die daarbij werden gebruikt, en de plaatsen, waar verzameld werd, kan ik verwijzen naar het eerste deel van dit rapport, in 1907 verschenen.

Het gedurende dat onderzoek verzamelde materiaal (meer dan 1300 exemplaren) diende in de eerste plaats tot onderzoek. Daarnaast werden een aantal visschen, door den helaas reeds overleden officier bij den Kon. West-Indischen maildienst, De Weger, in 't jaar 1907, bij Trinidad, Venezuela, Haïti en andere W.I. eilanden verzameld, onderzocht, en een aantal visschen om en bij Curaçao verzameld door Mej. Dr. A. Lens. Een kleine collectie visschen van Bonaire, door Dr. Belle bijeengebracht, en een dergelijke collectie van Dr. Shaw op St. Martin, werden reeds gedurende mijn verblijf in de kolonie door mij ontvangen en bij het door mij persoonlijk verzamelde materiaal gevoegd. Zodoende konden wij voor het systematisch onderzoek van de marine vischfauna beschikken over een zoo groot aantal exemplaren, op de meest verschillende plaatsen om onze eilanden verzameld, dat onze beschrijving van de marine fauna onzer kolonie wel niet op volledigheid aanspraak kan maken, maar toch in uitvoerigheid en nauwkeurigheid en in 't groote aantal der beschreven soorten de vergelijking met de van andere zijde verschenen beschrijvingen van de marine fauna van aangrenzende gebieden (1) alleszins kan doorstaan en een goede

(1) Bijvoorbeeld: Investigations of the aquatic resources and fisheries of Porto Rico by the U. S. Fish Commission Steamer Hawk in 1899. U. S. Fish Commission Bulletin for 1900, first part. Pag. 1-350, 1902.

en bruikbare handleiding kan vormen voor toekomstig vergelijkend visscherij-onderzoek.

Om deze vergelijking nog beter aan het doel te doen beantwoorden, is aan de beschrijving van het in West-Indië verzamelde materiaal toegevoegd een opsomming van de visschen aan de westkust van Tropisch Afrika te vinden (van de Kanarische Eilanden tot Angola), waarbij gebruik kon worden gemaakt van een mooie collectie, daar ter plaatse bijeengebracht door F. P. Vermeulen, op den Hollandschen trawler „Holland VII”, die van April tot Augustus 1906 in die streken de visscherij uitoefende.

Bij de hier volgende systematische opsomming der vischsoorten heb ik mij volkomen gehouden aan de Engelsche bewerking van Dr. Metzelaar. In bijlage I vindt men de volledige beschrijving der vischsoorten met afbeeldingen der belangrijkste, nieuwe en zeldzame soorten, en hunne synonyma. Hier laat ik alleen de opsomming volgen met de wetenschappelijke en inlandsche namen der verschillende soorten en de opgave van de plaatsen, waar zij werden gevangen.

Systematische Beschrijving.

PLAGIOSTOMATA. HAAIEN.

1. **Ginglymostoma cirratum** Gmelin;
Marigot-Bay, St. Martin;
groote haai, zeer algemeen voorkomend in West-Indië.
2. **Mustelus laevis** Risso;
inlandsche naam: tribon, verbastering van tiburon;
Bonaire, Curaçao, om onze eilanden algemeen voorkomend.
3. **Carcharias terraenovae** Richardson;
inlandsche naam: tribon;
Saba-bank, Curaçao, Port of Spain, Puerto Cabello;
algemeen langs de kust voorkomend van Labrador tot Brazilië.
Behalve deze haaien komen bij Curaçao nog voor: tribon
ala secoc, en tribon baké, waarvan geen exemplaren werden
gevangen.
4. **Pristis pectinatus** Ltk.;
inlandsche naam: zaagvisch;
Curaçao, kust van Venezuela.

BATOIDEI. ROGGEN.

5. **Rhinobatus horkelii** M. H.;
inlandsche naam: chuchoo;
Curaçao, St. Eustatius, ook bij Brazilië gevonden (Garman).
6. **Trygon hastata** De Kay;
inlandsche naam: chuchoo;
St. Martin, Curaçao (vermoedelijk).
7. **Pteroplatea micrura**. Schn.;
inlandsche naam: mantis (?);
Trinidad, Curaçao (vermoedelijk).

TELEOSTEI. BEENVISSCHEN.

8. ***Albula vulpes* L.;**
inlandsche naam: banana, harmanchie;
Simsons bay lagoon, St. Martin, verschillende vindplaatsen bij
de Boven- en Benedenwindsche Eilanden;
niet zeer algemeen, daarom van weinig waarde als voedselvisch.
9. ***Albula nemoptera* Fowler;**
Puerto Cabello, (coll. De Weger).
10. ***Elops saurus* L.;**
inlandsche naam: macambie (Benedenw. Eil.), tenpounder;
Curaçao;
als voedselvisch van weinig waarde, algemeen voorkomend.
11. ***Jenkinsia lamprotaenia* Gosse;**
inlandsche naam: sprot;
Curaçao, Bonaire (Lac), St. Eustatius;
een van de kleinere en niet zeer algemeen voorkomende clupeiden.
12. ***Sardinella anchovia* C. V.;**
inlandsche naam: ansjovis (Benedenw. Eil.), blacksprot,
(Bovenw. Eil.);
Curaçao, St. Eustatius.
13. ***Sardinella clupeola* C. V. (?);**
Haïti (coll. De Weger).
14. ***Sardinella sardina* Poey;**
inlandsche naam: sprot;
Fuikbaai, Curaçao, Puntabrabo, Aruba;
zeer algemeen in geheel West-Indië voorkomend.
15. ***Sardinella humeralis* C. V.;**
inlandsche naam: sprot.
zeer algemeen voorkomend van Florida tot Brazilië.
16. ***Sardinella macrophthalma* Ranz;**
inlandsche naam: sprot;
niet zoo algemeen als de vorige soorten.
Deze visschen worden bij duizenden op de markt in Curaçao
verkocht vooral in Juni.
17. ***Opisthonema thrissa* Brown;**
inlandsche naam: haring;
gevangen bij Curaçao en bij de Bovenw. Eilanden.

18. **Engraulis brownii** Gmelin;
bij St. Eustatius gevangen;
komt algemeen voor.
19. **Felichthys felis** L.;
één exemplaar van Trinidad.
20. **Felichthys bagre** L.;
één exemplaar van Georgetown.
21. **Conger vulgaris** L.;
inlandsche naam: aal, conger, colebra;
komt in alle zeeën voor.
22. **Chilorhinus svensonii** Lütken;
inlandsche naam: colebra blanco;
St. Eustatius, Curaçao.
23. **Leptocephalus** (aallarve).
24. **Ophichthys oculatus** Kaup;
inlandsche naam: colebra pientà;
komt in geheel West-Indië voor.
25. **Ophichthys acuminatus** Gronow;
inlandsche naam: colebra macamba;
komt in geheel West-Indië voor.
26. **Ophichthys havannensis** Bl. Schn.;
inlandsche naam: colebra macamba;
niet zoo algemeen als de vorige.
27. **Ophichthys gomesii** Castelnau;
inlandsche naam: colebra blanco;
algemeen van Florida tot Brazilië.
28. **Moringua boekei** Metz;
bij Curaçao gevangen.
29. **Muraena moringa** Cuv.;
komt zeer algemeen in geheel West-Indië voor.
30. **Muraena funebris** Ranz;
als de vorige soort.
31. **Muraena miliaris** Kaup;
niet zoo algemeen als de vorige soort.
32. **Muraena ocellata** Agass.;
algemeen van Florida tot Brazilië.
33. **Muraena spec.** (Nov.);
één exemplaar niet nader te bestemmen.

34. **Gymnomuraena nectura** (Jord. en Gilb.);
enkele exemplaren in 't lac op Bonaire.
35. **Echidna catinata** Bloch.;
inlandsche naam: oromanie, of colibra di awa;
algemeen in West-Indië voorkomend.
36. **Saurus intermedius** Agass;
Curaçao;
inlandsche naam: leguana di awa;
wordt niet gegeten.
37. **Saurus synodus** L.;
komt door geheel West-Indië voor.
38. **Saurus saurus** L.;
inlandsche naam: lizard fishes;
niet zeer algemeen.
39. **Saurus myops** Forster;
algemeen in tropische wateren voorkomend.
40. **Saurus spec**;
niet nader te bestemmen.
41. **Saurida gracilis** E. G.;
één exemplaar van St. Eustatius.
42. **Saurida tumbil** Bl.;
één exemplaar van St. Eustatius.
43. **Rivulus marmoratus** Poey;
inlandsche naam: matsjoerie;
Cuba, Curaçao.
44. **Cyprinodon riverendi** Poey;
inlandsche naam: barigondsje;
Cuba, Florida, Curaçao;
zoet en zout water.
45. **Poecilia vandepolli** van Lidth de Jeude;
inlandsche naam: matsjoerie;
zoet water der Benedenw. Eilanden.
46. **Aulostomus maculatus** Val.;
inlandsche naam: trompet;
bij Curaçao en Bonaire veel in canasters gevangen;
komt in geheel West-Indië voor.
47. **Fistularia tabacaria** L.;
inlandsche naam: sweep;
komt in geheel West-Indië algemeen voor.

48. **Syngnathus robertsi** Jord. & Rutter;
Curaçao, Aruba, St. Martin, Jamaica;
kleine, niet algemeene vorm.
49. **Syngnathus rousseaui** Kaup;
bij de Noordelijke Antillen voorkomend; ook Curaçao.
50. **Syngnathus cayorum** Everm. en Kindall;
Curaçao, Jamaica.
51. **Syngnathus crinigerus** Bean en Dresel;
inlandsche naam: angieuw;
algemeen van Florida tot Brazilië.
52. **Syngnathus dunckeri** Metzel;
vrij algemeen, Beneden- en Bovenwindsche Eilanden.
53. **Hippocampus punctulatus** Guich;
inlandsche naam: kabaai di awa.
algemeen in tropische zeeën, tot Brazilië toe.
54. **Belone ardeola** C. V.;
inlandsche naam: geepie;
Curaçao, Bonaire, St. Martin, St. Eustatius.
55. **Belone timucu** Walt;
als de vorige soort.
56. **Belone acus** Lacep;
als de vorige soort;
West-Indië, Atlant. oceaan (tropisch en subtropisch).
57. **Belone caribbaea** Lesueur;
als de vorige soort, niet zeer algemeen.
58. **Belone raphidoma** Ranz;
de meest gewone soort geepie;
geheel West-Indië.
59. **Belone hians** C. V.;
grooter dan de vorige soorten geep;
door geheel West-Indië voorkomend.
60. **Hemirhamphus unifasciatus** Ranz;
inlandsche naam: balao di flambeeuw;
in alle tropische zeeën voorkomend, in West- en Oost-Indië.
61. **Hemirhamphus brasiliensis** L.;
inlandsche naam: balao tjikitoë;
van Florida tot Bahia.

62. **Exocoetus vinciguerra** Jord. en Merk.;
inlandsche naam: fleertjie;
Curaçao, tropische wateren.
63. **Exocoetus affinis** Günther;
inlandsche naam: fleertjie;
als de vorige soort.
64. **Exocoetus bahiensis** Ranz.;
inlandsche naam: bolado(r), flying fish.
de meest algemeene vliegende visch in West-Indië.
65. **Exocoetus gibbifrons** C. V.;
als 63.
66. **Exocoetus mesogaster** Bl.;
inlandsche naam: popo, bolador;
in alle tropische wateren voorkomend.
67. **Atherina laticeps** Poey;
inlandsche naam: piëskeetsjie;
de meest algemeene der West-Indische silveriden.
68. **Atherina araca** Jord. en Gilb.;
als boven, niet zoo algemeen.
69. **Atherina harringtonensis** Goode;
als 68.
70. **Atherina spec.**;
niet nader te bestemmen.
71. **Melavorhinus boekei** Metzel.;
St. Martin.
72. **Mugil curema** C. en V.;
inlandsche naam: aalder (Curaçao);
algemeen voorkomend in West-Indische wateren.
73. **Mugil trichodon** Poey;
als boven;
van Florida tot Brazilië.
74. **Mugil brasiliensis** Agass;
als boven;
algemeen in West-Indië, weinig handelswaarde.
75. **Myxus curvidens** C. V.;
langs beide kusten van Amerika voorkomend.
76. **Polynemus virginicus** L.;
over geheel West-Indië verspreid, doch niet van handelswaarde.

77. **Sphyraena picuda** Bl. 2. Schn.;
inlandsche naam: snoek, picoeda;
algemeen in West-Indische wateren, van handelswaarde.
78. **Sphyraena guachancho** C. V.;
als boven, minder algemeen.
79. **Sphyraena picudilla** Poey;
inlandsche naam: ronde snoek;
algemeen in West-Indië voorkomend.
80. **Peprilus paru** L.;
inlandsche naam: carawau;
weinig gevangen, door geheel West-Indië verspreid.
81. **Holocentrus ascensionis rufus** Walbaum;
inlandsche naam: kandeeltje, red man (Saba, St. Martin);
algemeen door West-Indië verspreid, veel gevangen.
82. **Holocentrus coruscus** Poey;
als 81, niet zoo algemeen.
83. **Holocentrus vexillarius** Poey;
als 82.
84. **Myripristis jacobus** C. V.;
inlandsche naam: kandeeltje debajo (Cur.), buffalohead
(Bovenw. Eil.);
Boven- en Benedenwindsche Eilanden.
85. **Cyphosus elegans** Peters;
inlandsche naam: bocachito pientá;
komt langs beide kusten van Amerika voor.
86. **Cyphosus bosci** Lacep;
inlandsche naam: bocachito;
langs de geheele kust van Cape Cod tot West-Indië, algemeen.
87. **Epinephelus coronatus** C. V.;
inlandsche naam: poeroentsjie;
algemeen in West-Indië, evenals de andere serranidae (87—105);
van goede handelswaarde.
88. **Epinephelus punctatus** L.;
inlandsche naam: poeroentsjie pretoc, butter fish;
algemeen.
89. **Epinephelus stellatus** Blosser;
inlandsche naam: poeroentsjie cabrito;
als 88.

90. **Epinephelus adscensionis** Osbeck;
inlandsche naam: gatoe (kat), rockhind;
algemeen voorkomend, goede handelswaarde.
91. **Epinephelus striatus** Bloch;
inlandsche naam: Jacob Peper (verbastering v. Jacob Evertsen);
zeer algemeen.
92. **Epinephelus guttatus** L.;
inlandsche naam: gatoe pretoe (corra), red hind;
algemeen in West-Indische wateren.
93. **Epinephelus morio** C. V.;
inlandsche naam: meroe;
vooral voor Aruba van groote handelswaarde, algemeen
voorkomend.
94. **Epinephelus afer** Bloch;
inlandsche naam: olitoe, sjeeuw, Hamlet;
vrij algemeen voorkomend.
95. **Epinephelus bonaci** Poey;
inlandsche naam: djampau, John Paw;
algemeen voorkomend, doch als voedselvisch van geen groote
handelswaarde.
96. **Epinephelus interstitialis** Poey;
kleiner dan de vorige.
97. **Epinephelus ruber** Bloch;
inlandsche naam: granmèl;
vrij algemeen.
98. **Paranthias furcifer** C. V.;
inlandsche naam: rey di corra;
vrij veel gevangen.
99. **Serranus dewegeri** Metzel.;
als 98.
100. **Serranus phoebe** Poey;
vrij algemeen in de West-Indische wateren.
101. **Serranus tigrinus** Bl.;
inlandsche naam: piesca di spons;
komt in sponsen voor, niet algemeen
102. **Serranus tabacarius** C. V.;
inlandsche naam: piesca di oro;
kleine vorm, niet zeer algemeen.

103. **Serranus radialis** Q. C.;
algemeen in West-Indische wateren.
104. **Serranus unicolor** Walb.;
inlandsche naam: okvees, ook okvees pretoe, okvees geel,
cacubol;
algemeen, zeer variabele vorm.
105. **Centropristis dispilurus** Gnthr.;
kleine vorm.
106. **Rhypticus saponaceus** Bl. Schn.;
inlandsche naam: habon, soap fish;
algemeen in West-Indische wateren.
107. **Rhypticus bipistrinus** Mitchell;
als 106.
108. **Rhypticus coriaceus** Cope;
alleen bekend van de Noordelijke Antillen.
109. **Rhypticus spec.**;
Bonaire, niet nader te bestemmen.
110. **Priacanthus cruentatus** Lacep;
inlandsche naam: kandeeltje stienkie;
algemeen voorkomend.
111. **Centropomus undecimalis** Bl.;
inlandsche naam: bima;
algemeen in West-Indië.
112. **Apogon maculatus** Poey;
inlandsche naam: corra;
vrij algemeen voorkomend.
113. **Apogon binotatus** Poey;
inlandsche naam: corra wowo pretoe;
in sponsen, ook vrij levend.
114. **Apogon pigmentarius** Poey;
als 113;
Curaçao, St. Eustatius.
115. **Apogon stellatus** Cope;
als 114.
116. **Lutjanus griseus** L.;
inlandsche naam: caranchito, gray snapper;
algemeen.

117. **Lutjanus jocu** Bloch-Schn.;
inlandsche naam: barstebers (bastaardbaars), dogteeth snapper;
evenals de andere lutjaniden algemeen voorkomend.
118. **Lutjanus (neomaenis) apodus** Walch;
inlandsche naam: bers, snapper;
algemeen gevangen, en grif verkocht.
119. **Lutjanus buccanella** C. V.;
inlandsche naam: calala di hoendæ, colulie, blackfish;
vrij algemeen in West-Indië.
120. **Lutjanus aya** Bl.;
inlandsche naam: pargo, red snapper;
zeer algemeen en als voedselvisch zeer gewild.
121. **Lutjanus vivianus** C. V.;
inlandsche naam: chierkie boca blanca, snapper of silk;
vrij algemeen in de West-Indische wateren.
122. **Lutjanus analis** C. V.;
inlandsche naam: carpitan, corra;
met de volgende soort zeer algemeen, van goede handelswaarde.
123. **Lutjanus synagris** L.;
inlandsche naam: corra largo, pot-snapper;
zeer algemeen, goede handelswaarde.
124. **Lutjanus mahogoni** C. V.;
inlandsche naam: calala (zie soort 119);
vrij goede handelswaarde.
125. **Lutjanus megalophthalmus** Ev. Marsh;
bij de Noordelijk Antillen, Portorico.
126. **Lutjanus chrysurus** Bl.;
inlandsche naam: grasteltje, yellow-tail;
kleine visschen, vrij goede handelswaarde;
algemeen voorkomend.
127. **Lutjanus aurowbens** C. V.;
inlandsche naam: sabernaatsjie, red roundhead;
algemeen in de West-Indische wateren.
128. **Lutjanus dentatus** Guich.;
inlandsche naam: caranchito (?), gray snapper;
weinig algemeen.
129. **Aprion macrophthalmus** M. en Tr.;
een exemplaar van Suriname.

130. **Malacanthus plumieri** Bl.;
inlandsche naam: piescaraai colo di chieniesjie, whiting;
algemeen in de West-Indische wateren.
131. **Caulolatilus chrysops** C. en V.
inlandsche naam: udieuw;
Aruba, Pargobank, niet zeer algemeen.
132. **Micropogon furnieri** Desm.;
inlandsche naam: ronco;
door West-Indië verspreid, niet zeer algemeen.
133. **Umbrina coroides** C. V.;
inlandsche naam: colbino, piesca di plata, sand-eater;
door West-Indië verspreid, niet zeer algemeen.
134. **Umbrina gracilicirrus** Metz.;
als voren;
een exemplaar uit Venezuela.
135. **Eques acuminatus** Bl. Schn.;
inlandsche naam: rey di piesjie porco;
als voren.
136. **Eques punctatus** Bl. Schn.;
één exemplaar uit Venezuela;
als voren.
137. **Eques lanceolatus** L.;
inlandsche naam: rey di ladrondjie;
door geheel West-Indië verspreid.
138. **Eucinostomus pseudogula** Poey;
inlandsche naam: schobbejak;
vrij algemeen van Cuba tot Brazilië.
139. **Eucinostomus harengulus** G. en B.;
inlandsche naam: warda costa;
vrij algemeen.
140. **Ulaemia lefroyi** Goode;
inlandsche naam: schobbejak, silverfish;
vrij algemeen.
141. **Gerres cinereus** Walb.;
inlandsche naam: cabrikoetsjie, raansla (jonge exemplaren),
schobbejak, warda costa;
evenals de vorige soorten, doch wordt meer gevangen en
grif verkocht.

142. **Gerres rhombeus** C. V.;
inlandsche naam: carpeeuw;
algemeen in West-Indische wateren.
143. **Gerres brasiliensis** C. V.;
inlandsche naam: carpeeuw;
algemeen in West-Indische wateren.
144. **Haemulon album** C. V.;
inlandsche naam: margaret fish, coorcoor, Bovenw. Eilanden
vrij algemeen.
145. **Haemulon bonariense** C. V.;
inlandsche naam: coorcoor pretoe, grunt;
vrij algemeen.
146. **Haemulon parra** Desm;
inlandsche naam: coorcoor pretoe, grunt;
als vorige soort.
147. **Haemulon carbonarium** Poey;
inlandsche naam: coorcoor, grunt;
als vorige voort.
148. **Haemulon steindachneri** Jord. en Gilb;
inlandsche naam: coorcoor pretoe, black grunt;
als vorige soort.
149. **Haemulon melanurum** L.;
inlandsche naam: mamelootsjie, canoltje, totoc, sandy goggle;
als vorige soort.
150. **Haemulon sciurus** Shaw;
inlandsche naam: coorcoor, grunt;
algemeener dan de vorige soorten.
151. **Haemulon plumieri**, Lacep;
2 exemplaren van Haïti.
152. **Haemulon flavolineatum** Desm.;
inlandsche naam: coorcoor rooibekkie;
zeer algemeen, vooral op Aruba veel gevangen en verkocht.
153. **Haemulon chrysargyreum** Gnthr.;
inlandsche naam: coorcoor, taki taki, toc toc;
zeer algemeen.
154. **Haemulon rimator** Jordan en Swain;
inlandsche naam: canoltje;
vrij algemeen, van Cape Hatteras tot Brazilië.

155. **Haemulon aurolineatum** C. V.;
één exemplaar van St. Martin.
156. **Haemulon striatum** L.;
één exemplaar vermoedelijk uit Curaçao.
157. **Haemulon maculicauda** Gilb.;
één exempl. van Curaçao, tot dusverre alleen van de Oost-
kust van Amerika bekend.
158. **Pristipoma boschmae** Metzel.;
één exemplaar, vermoedelijk van Curaçao.
159. **Pristipoma surinamense** Bl.;
inlandsche naam: booneknaap;
vrij algemeen in de West-Indische wateren.
160. **Pristipoma virginicus** L.;
inlandsche naam: bandera espagnol;
vrij algemeen in de West-Indische wateren.
161. **Pristipoma lineatum** C. V.;
één exemplaar van de kust van Suriname.
162. **Pristipoma corvinaeformis** Steind.;
één exemplaar, vermoedelijk van Trinidad.
163. **Conodon nobilis** L.;
twee exemplaren Haïti en Garupano.
164. **Calamus calamus** C. V.;
inlandsche naam: porgy;
vrij algemeen in de West-Indische wateren.
165. **Calamus bajonado** Bl. Schn.;
inlandsche naam: djente maisjie;
de meest algemeen voorkomende calamide in de West-Indische
wateren.
166. **Pagrus vulgaris** C. V.;
inlandsche naam: booneknaap (als No. 159);
Aruba, Venezuela.
167. **Sargus unimaculatus** Bl.;
inlandsche naam: briem;
algemeen, van Florida tot Rio Janeiro.
168. **Upeneus maculatus** Bloch;
inlandsche naam: barbier sjouwer, mandienga, spotted goatfish;
vrij algemeen, evenals de volgende soort.
169. **Upeneus martinicus** C. V.;
inlandsche naam: barbier, goatfish;
vrij algemeen, evenals de vorige soort, hebben handelswaarde.

170. **Antigonia capros** Lowe;
inlandsche naam: chapien;
algemeen verspreid Atl. Oceaan en Stille Zuidzee.
171. **Ephippus faber** Broussonet;
inlandsche naam: ocean cobbler (Bovenw. Eilanden);
algemeen verspreid in Atl. Oceaan.
172. **Chactodon ocellatus** Bl.;
inlandsche naam: tjamba blanco;
algemeen verspreid.
173. **Chactodon sedentarius** Poey;
inlandsche naam: tjamba, butterfly fish;
algemeen verspreid, doch zeldzaam.
174. **Chactodon striatus** L.;
inlandsche naam: tjamba geel, butterfly fish;
algemeen verspreid.
175. **Chactodon capistratus** L.;
inlandsche naam: tjamba;
algemeen verspreid.
176. **Pomacanthus paru** Bl.;
inlandsche naam: tjamba pretoe;
algemeen verspreid.
177. **Pomacanthus arcuatus** L.;
inlandsche naam: tjamba, zwarte engel, black angel;
algemeen verspreid.
178. **Holacanthus tricolor** Bl.;
inlandsche naam: tjamba, swede;
algemeen verspreid.
179. **Holacanthus ciliaris** L.;
inlandsche naam: rey di tjamba, yellow angel;
algemeen verspreid.
180. **Acanthurus caeruleus** Bl. Schn.;
inlandsche naam: kleinvissie, blue doctor;
algemeen verspreid.
181. **Acanthurus hepatus** L.;
inlandsche naam: kleinvissie blanco;
algemeen verspreid.
182. **Acanthurus bahianus** Casteln.;
inlandsche naam: kleinvissie pretoe of kl. geel, yellow doctor;
algemeen verspreid.

183. **Chromis marginatus** Casteln.;
inlandsche naam: steltje;
langs de kust van Zuid-Amerika voorkomend.
- 184—186. **Pomacentrus spec.**
P. fuscus inlandsche naam: ladrondsje petoe;
P. analis inlandsche naam: ladrondsje;
P. leucostictus inlandsche naam: ladrondsje blauw;
algemeen verspreid.
- 187—189. **Abudefduf spec.** Gilb.;
Abudefduf concolor inlandsche naam: catabalie préto;
Abudefduf saxatilio; inlandsche naam: catabalie, pilot fish;
Abudefduf rudis inlandsche naam: catabalie;
algemeen verspreid.
190. **Microspathodon chrysurus** C. V.;
inlandsche naam: rey pandoe;
algemeen verspreid.
191. **Laenolaimus maximus** Walb.;
inlandsche naam: okvees corra, hogfish;
algemeen in West-Indische wateren.
192. **Cossyphus rufus** L.;
inlandsche naam: djinti catchoo;
algemeen van Florida tot Rio Janeiro.
193. **Cossyphus puellaris** Poey;
inlandsche naam: pietchie geel;
als 192.
- 194—201. **PlatyGLOSSUS spec.**;
Pl. radiatus; inlandsche naam: goetoe berde, blue parrot;
Pl. garnoti; inlandsche naam: pietchie blauw;
Pl. cyanocephalus; inlandsche naam: goetoe, parrotfish;
Pl. maculipinna; inlandsche naam: goetoe;
Pl. bivittatus; inlandsche naam: goetoe;
Pl. crotaphus; inlandsche naam: pietch pompoena;
Pl. elegans; inlandsche naam: pietch pompoena;
Pl. microstomus; inlandsche naam: piesca di santoe;
alle vrij algemeen verspreid in West-Indische wateren.
202. **Julis nitida** Gnthr.;
inlandsche naam: pietchie pientà;
Jamaica, Curaçao, Bonaire, St. Eustatius.
203. **Julis bifasciata** Bloch;
inlandsche naam: pietchie blauw;
vrij algemeen in West-Indische wateren.

204. **Doratonotus boekei** Metzel;
3 exemplaren van Curaçao en Bonaire.
205. **Xyrichtys rosipes** Jord. en Gilb.;
inlandsche naam: pietchie di hoendoe.
vrij algemeen.
206. **Xyrichtys martinicensis** C. V.;
Martinique, St. Eustatius.
207. **Xyrichtys psittacus** L.;
inlandsche naam: djente katchoo;
vrij algemeen.
208. **Xyrichtys modestus** Poey;
St. Eustatius.
209. **Cryptotomus roseus** Cope;
St. Martin, St. Eustatius.
210. **Cryptotomus beryllinus** Jord. en Swain;
inlandsche naam: round head still;
St. Eustatius.
- 211—220. **Sparisoma spec.;**
Sparisoma xystrodon; inlandsche naam: goetoe barica geel;
Sparisoma radians; goetoe;
Sparisoma haplomystax; goetoe;
Sparisoma aurofrenatum; inlandsche naam: goetoe kétékété,
red parrot fish;
Sparisoma abildgaardi; inlandsche naam: goetoe corra, g.
raboegaai;
Sparisoma distinctum; goetoe rooibekkie;
Sparisoma chrysopterum; goetoe blauw, blue parrotfish;
Sparisoma viride;
Sparisoma flavescens; inlandsche naam: goetoe blanco;
Sparisoma brachiale;
al deze papegaaivischsoorten zijn door geheel West-Indië
verspreid, 't meest algemeen is de goetoe blanco, de goetoe's
worden als voedselvisschen verkocht (Curaçao), doch niet
geregeld.
- 221—225. **Scarus spec.;**
Scarus punctulatus; goetoe blauw (zie No. 217);
Scarus taeniopterus; goetoe;
Scarus Evermanni;
Scarus vetula; goetoe; parrotfish;
Scarus coeruleus; goetoe blauw, goetoe kedebe, blue parrot.

226. **Pseudoscarus guacamaia** Cuv.;
inlandsche naam: goetoe pretoe;
ook deze goetoe's komen algemeen verspreid in West-Indië
voor, en worden wel gegeten, doch niet geregeld.
227. **Chlorinemus saurus** Bl. Schn.;
inlandsche naam: erdieuw, leather jack;
Oost- en Westkust van Centraal-Amerika.
228. **Caranx sanctae helenae** C. V.;
inlandsche naam: maulo;
door den geheelen Atl. Oceaan voorkomend.
229. **Caranx crumenophthalmus** Bl.;
inlandsche naam: marsbango, cabe lias;
in alle tropische zeeën;
een der meest belangrijke voedselvisschen van Curaçao.
230. **Caranx punctatus** Agass.;
inlandsche naam: maulo; scad, round robin, jack.
231. **Caranx amblyrhynchus** C. V.;
232. **Caranx ruber** Bloch;
inlandsche naam: jager, greenback cavaly;
vrij algemeen, als voedselvisch gebruikt.
233. **Caranx bartholomaei** C. V.;
inlandsche naam. cavaly.
234. **Caranx chrysos** Mitch.;
inlandsche naam: jager boca bau, runner, deepwater cavaly;
als voedselvisch belangrijk.
235. **Caranx hippos** L.;
inlandsche naam: corcoba blanco, horse eye cavaly;
als voedselvisch belangrijk, algemeen voorkomend.
236. **Selene setipinnis** Mitch.;
langs beide kusten van tropisch Amerika.
237. **Selene vomer** L.;
inlandsche naam: karikabaai;
langs beide kusten van tropisch Amerika algemeen.
238. **Micropteryx chrysurus** L.;
inlandsche naam: casambitoe;
als 237.
239. **Trachinotus glaucus** Bloch;
inlandsche naam: pampano, pamper, cobbler;
algemeen in West-Indische wateren; wordt weinig gegeten.

240. **Trachinotus rhomboides** Bloch;
vrij algemeen in West-Indische wateren.
241. **Temnodon saltator** L.;
algemeen verspreid, doch zeldzaam gevangen.
242. **Cybium cavalla** C.;
inlandsche naam: konnevees (koningsvisch), kingfish.
243. **Cybium regale** Bl.;
inlandsche naam: mulato, Spanish mackerel;
algemeen, van groot belang als voedselvisch.
244. **Cybium maculotum** Mitch.;
inlandsche naam: piesjiesjee;
algemeen.
245. **Coryphaena hippurus** L.;
inlandsche naam: dolphin, dradoe;
belangrijk voor de consumptie; algemeen.
246. **Coryphaena equisetis** L.;
inlandsche naam: dolphin;
algemeen, belangrijk voor de consumptie.
247. **Tetrapturus belone** C. V.;
inlandsche naam: balao;
algemeen, belangrijk voor de consumptie.
248. **Xiphias gladius** L.;
inlandsche naam: balao;
Evenals de vorige soort algemeen voorkomend, en van belang
als voedselvisch, evenwel in minder groot aantal gevangen
dan No. 247.
- 249—259. **Pleuronectidae**, platvisschen.
De platvisschen, hoewel nog al eens gevangen, zijn als
voedselvisschen slechts weinig belangrijk. Bij gebrek aan
grondnetten (trawls) wordt er nooit intensief naar gevischt.
Rhomboidichthys ocellatus; inlandsche naam: tapa tapa, sopra
di Dioos, flounder;
Rhomboidichthys lunatus, tapa tapa;
Rhomboidichthys maculifer, tapa tapa;
Hemirhombus micrurus, tapa tapa;
Citharichthys unicornis, tapa tapa;
Citharichthys spec., tapa tapa;
Citharichthys spilopterus, tapa tapa;
Achirus inscriptus, tapa tapa;

Achirus lineatus, tapa tapa;
Symphurus marginatus, tapa tapa.

260—275. **Gobiidae.**

Over 't algemeen zijn dit kleine vischjes, door de visschers onder den naam „brand” of den verachtelijken naam „sootjie” (zoodje!) bijeengevoegd. Zij komen in tal van soorten in de koraalkommen etc. voor, doch hebben geen waarde als voedselvisschen en worden niet gevangen. Voor de wetenschappelijke beschrijving dezer groep verwijs ik naar het door Dr. Metzelaar bewerkte gedeelte. Een opsomming der soorten hier te geven, schijnt mij overbodig.

276—278 **Echeneidae**, shark suckers.

Echeneis naucrates, *E. naucratoides* en *E. nemora* komen algemeen in de West-Indische wateren voor (op haaien en zwaardvisschen), doch worden niet gegeten; inlandsche naam: pega, sucking fish.

279—284 **Scorpaenidae.**

Ook deze vormen, hoewel wetenschappelijk zeer belangrijk, zijn dit niet voor de visscherij. Onder den naam „brandhorovissie” door de visschers samengevat worden zij door hen gevreesd om de vergiftige eigenschappen van de rugvinstekels, en worden zij niet voor consumptie gebruikt. Voor de beschrijving der verschillende soorten kan ik dus volstaan met te verwijzen naar het door Dr. Metzelaar bewerkte gedeelte van dit rapport.

285. **Prionotus punctatus** Bloch;

inlandsche naam: bolado di binnenwater;
 algemeen verspreid.

286. **Dactylopterus volitans** C. V.;

inlandsche naam: bolado di binnenwater;
 algemeen verspreid.

287. **Gillellus semicinctus** Gilb.;

als 286.

288—289. **Dactiloscopus tridigitatus en poeyi** Gilb.;

zeer kleine vischjes.

290. **Callionymus pauciradiatus** Gilb.

291. **Callionymus boekei** Metzel.

292. **Callionymus sancti eustatii** Metzel.;

inlandsche naam: pega di barranca;
 kleine, voor de consumptie niet belangrijke visschen.

293—310. **Gobiesocidae, blenniidae en batrachiidae spec.;**

Een reeks van kleine soorten, evenals de gobiidae onder den naam van „brand” door de visschers saamgevat, economisch van geen belang, voorkomend in de koraalkommen en bij de koraalriffen. Ook voor deze soorten verwijs ik naar het door Dr. Metzelaar bewerkte gedeelte van dit rapport.

311. **Antennarius gibba** Mitch.;
inlandsche naam: zoembivees, frogfish;
kleine visschen, algemeen verspreid.
312. **Antennarius scaber** Cow.;
inlandsche naam: zoemtievees, frogfish;
als 311.
313. **Antennarius pardalis** C. V.;
als 311.
314. **Malthe vespertilio** L.;
inlandsche naam: sea bat;
kleine visschen, algemeen verspreid;
zonder economisch belang, evenals 311, 312, 313.
316. **Balistes capriscus** Gmelik;
inlandsche naam: old wife, piesjie porco;
vrij algemeen verspreid.
317. **Balistes vetula** L.;
inlandsche naam: piesjie porco, old wife;
vrij algemeen verspreid, doch weinig als voedsel gebruikt;
evenals 316 en 318.
318. **Balistes ringens** L.;
inlandsche naam: piesjie porco pretoe;
minder algemeen dan 317.
- 319—321. **Monacanthus ciliatus, setifer, tuckeri**;
inlandsche naam van deze drie soorten: piesjie porco, bastard
old wife;
algemeen verspreid, doch niet van economisch belang.
322. **Pseudomonacanthus amphioxys** Cope;
inlandsche naam: piesjie porco fluit;
niet algemeen.
- 323—327. **Ostracientidae, koffervisschen.**
Ostracion triqueter L.; inlandsche naam: chapin, caja di morto,
trunk fish;
Ostracion bicaadalis L.; inlandsche naam: chapin, caja di morto,
trunk fish;

Ostracion trigonus L.; inlandsche naam: chapin, caja di morto, trunk fish;

Ostracion quadricornis L.; inlandsche naam: rey di chapin; algemeen verspreid en dank zij hun eigenaardigen vorm, algemeen bekend, geen economische waarde, worden als curiositeit verkocht.

328—335. **Tetraodontidae**, blaasvisschen, puffers.

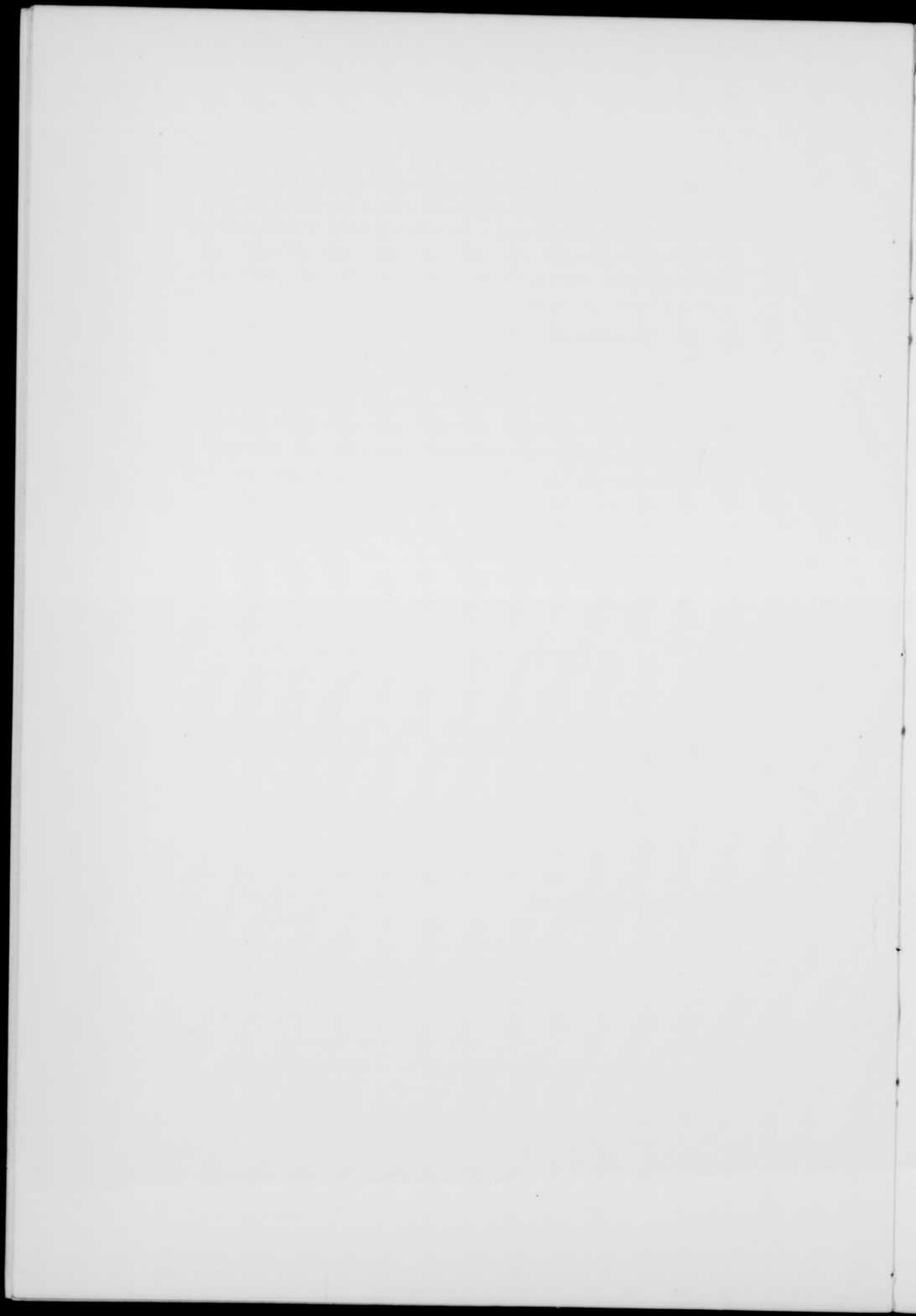
Tetrodon lagocephalus, tetr. *pachycephalus*, tetr. *sprengleri*, tetr. *marmoratus*, tetr. *harperi*, tetr. *eulipidotus*, tetr. *rostratus*, tetr. *psittacus*, alle „blaas“, „toad fish“, „puffer“ genoemd, vrij algemeen verspreid, doch zonder economische waarde, behalve als curiositeit (opgeblazen en gedroogd).

336. **Diodon hystrix** L.;

inlandsche naam: djiendja, hedgehog;
algemeen verspreid.

337. **Chilomycterus briareos** Metzel.;

inlandsche naam: hedgehog;
St. Eustatius.



Algemeene beschouwingen.

Als men de hier beschreven vischsoorten nagaat, zijn er twee verschijnselen, die het geheele beeld beheerschen: de rijkdom van de marine vischfauna en de groote hoeveelheid voor de consumptie belangrijke soorten, die zij bevat. Als men in aanmerking neemt, dat slechts gedurende ruim 10 maanden kon worden verzameld, terwijl het gebied, dat moest worden onderzocht, zoowel de Benedenwindsche als de Bovenwindsche Eilanden omvatte, en terwijl tegelijkertijd nog allerlei andere zaken moesten worden nagegaan, zoodat dikwijls slechts weinig gelegenheid tot verzamelen van materiaal bestond, dan wijst het groote aantal vischsoorten in de verzamelde collectie op een zeer rijke vischfauna. En indien men dan de in de wateren om Curaçao verzamelde vischsoorten vergelijkt met de vischfauna van de Noordelijke Antillen, van Jamaica, Porto-Rico, Cuba en de kuststreken van de Golf van Mexico, vooral Florida en de Florida Keys, dan verkrijgt men eveneens den indruk van een rijke, veelomvattende fauna, die niet voor de vischfauna dezer streken behoeft onder te doen. Integendeel, als men nagaat, dat volgens de opgaven van Evermann op het National Fishery Congress het geheele aantal soorten van de aan visschen zoo rijke wateren van de Florida Keys 290 bedroeg, terwijl van Key West, de grootste vischmarkt van de kust van Florida, 250 soorten bekend zijn, waarvan ongeveer 100 soorten grootere of geringere marktwaarde bezitten als voedselvisschen, dan blijken de wateren om de Benedenwindsche Eilanden zeer rijk aan vischsoorten en vooral zeer rijk aan voedselvisschen te zijn. En geen wonder. Juist de eigenaardige stroomverhoudingen in de wateren om deze eilanden (men leze hierover het eerste gedeelte van dit rapport na, waar deze stroomverhoudingen uitvoerig beschreven zijn), en vooral bij de groepen van kleine eilandjes, de Roques en de Monges, de groote verschillen in diepten, de nabijheid van het vasteland van Venezuela met zijn in zee uitstroomende zoetwater-rivieren, dat alles werkt samen om de wateren om onze Benedenwindsche

Eilanden tot een rijk, vooral aan voor de consumptie belangrijke vischsoorten rijk vischwater te stempelen. Langs de geheele kust van Florida, het rijkste vischgebied van de Vereenigde Staten, is volgens de opgaven van Evermann het aantal van de voor de consumptie van meer of minder belang zijnde vischsoorten 140, in de wateren van Porto-Rico werden 291 vischsoorten gevonden (Bulletin of the U. S. Fish Commission for 1900), waarvan ongeveer 100 voor de consumptie in aanmerking komen. Vergelijken wij deze cijfers met die van dit rapport, n.l. 337 verschillende vischsoorten, waarvan meer dan 180 als voedselvisschen meer of minder waarde bezitten, dan behoeft de boven geformuleerde stelling geen nader betoog.

Bij die voedselvisschen zijn daarbij een groot aantal, die flinke afmetingen verkrijgen, door hun stevig vleesch op hoogen prijs gesteld worden, en dikwijls in groot aantal worden gevangen. Men ga slechts na de lijst der epinephelus-soorten (11 in aantal) en de overige serranidae (8 soorten), die der lutjanidae (neomaenis, 13 soorten), die der pristipomatidae (vooral haemulon spec., 18 soorten), de in Cuba en Key West zoo grif verkochte „grunts” (coorcoor, taki-taki, canoltje), de lijst van de belone- en hemiramphus-soorten (geepie), de goetoe's (scarus- en sparisoma-spec., 12 soorten), de caranx-soorten (marsbangoe, cavale, jager), de koningsvisschen (cybium cavalla), de balao, de dolphijnen, (coryphaena), en telkens weer treft ons de rijkdom van de Curaçaosche wateren aan waardevolle voedselvisschen.

Dat vele dezer voedselvisschen dikwijls in groot aantal gevangen en aan de markt gebracht worden, bleek reeds uit de lijsten, die aan het eerste gedeelte van dit rapport werden toegevoegd. (I, bijlage B, pag. 186—190 en pag. 53—60), doch ook uit de latere visscherij-rapporten van Dr. Van Breemen blijkt hetzelfde. Zoo werden volgens het rapport over 1909 in Bonaire 180.000 stuks marsbangoes aangebracht, en werden van Maart tot einde Juli 1909 bij Curaçao en de overige Benedenwindsche Eilanden ruim 2700 dolphijnen gevangen en verkocht. Dit laatste is echter een exceptioneel groot aantal, en voor de overige acht maanden in datzelfde jaar bedroeg het aantal dolphijnen ongeveer 2000 (1).

Om onze Bovenwindsche Eilanden is de vischfauna minder rijk, zoowel aan soorten als aan exemplaren van voedselvisschen, dan

(1) Gedurende de maanden April—November 1905 werden slechts 887 dolphijnen aan de markt gebracht, in Aruba slechts 52 (van Juli—October.)

in de Curaçaosche wateren. De visscherij wordt daar ook minder intensief uitgeoefend, behalve dan door de visschers van Simsons Bay village. Hier werd bijvoorbeeld van Maart tot December 1909 106.000 Kg. visch gevangen, waarvan de helft naar Marigot aan de markt werd gebracht. Doch men moet bij de vergelijking van de in dit rapport beschreven vischfauna van de Boven- en Benedenwindsche Eilanden wel in het oog houden, dat om en bij de Bovenwindsche Eilanden gedurende het onderzoek in 1905 veel minder intensief werd verzameld dan in de Curaçaosche wateren. Ongetwijfeld zouden bij langer durend onderzoek ook voor de Bovenwindsche Eilanden nog belangrijke aanwinsten voor de vischfauna te boeken zijn. En ook bij den korten duur van het onderzoek werden toch, zooals uit de gegevens der vorige bladzijden en uit de gedetailleerde beschrijving van Dr. Metzelaar blijkt, een groot aantal vischsoorten in de wateren om de Bovenwindsche Eilanden buitgemaakt. Voor de algemeene beschrijving hiervan en de eigenaardige vangsten van „red-man” en „old-wife” (*holocentrus ascensionis* en *balistes vetula*) gedurende den paaitijd op de Sababank kan ik naar het eerste gedeelte van dit rapport (I, pag. 60—63) verwijzen.

Maar voor ik deze algemeene beschouwingen eindig en het woord laat aan Dr. Metzelaar voor zijn systematische beschrijving der verzamelde vischsoorten, moet ik nog op eenige groote leemten wijzen, leemten, die ook door het latere onderzoek, nadat het eerste gedeelte van dit rapport werd gepubliceerd, nog niet zijn aangevuld.

Wij weten nu, welk een rijke vischfauna de wateren van onze West-Indische Eilanden herbergen, en, zooals ik reeds in 't eerste gedeelte van dit rapport aangaf, en zooals in dit tweede gedeelte uit de systematische beschrijving der vischsoorten duidelijk blijkt, wij zien, dat voor de ontwikkeling van het visscherijbedrijf vooral onze Benedenwindsche Eilanden, wat hunne natuurlijke gesteldheid aangaat, uitermate gunstig gelegen zijn. De kustlijn is lang en rijk aan afwisseling, de inhammen en baaien bieden tal van beschutte plaatsen voor de jonge visch aan, waar het broed zich veilig kan ontwikkelen, in de nabijheid liggen zeer vischrijke eilanden-groepen (los Monges, los Roques), de kustwateren van het vasteland aan de overzijde zijn ondiep, gedeeltelijk zandig, rijk aan visch, en dank zij de gunstige stroomingen (zie het 1ste deel van dit rapport) zullen jonge larven en pelagisch drijvende vischeieren uit de vischrijke buurten van Cumana, de baai van Coriaco en Margarita zich in de richting van onze eilanden verzamelen:

zijn de larven zoo groot geworden, dat zij hun pelagisch leven vaarwel zeggen, diepere waterlagen gaan opzoeken en zich langzamerhand naar de kust toe gaan bewegen, dan zullen zij op de kusten van onze eilanden een veilige, aan voedsel rijke schuilplaats vinden, en ook verder op tusschen Aruba en het vasteland in betrekkelijk rustig water zich verder kunnen ontwikkelen.

Dat alles verklaart de vischrijdheid van de wateren van onze Eilanden.

Maar verder dan deze algemeene beschouwingen kunnen wij niet gaan.

Van de levensgeschiedenis van de visschen, die hier zijn beschreven, weten wij nagenoeg niets. Van hunne levensgewoonten evenmin. Van sommige soorten zooals de hemiramphus-soorten, de carangidae, weten wij dat zij in scholen van de eene plaats naar de andere trekken. Maar welke visschen speciaal „trek“-visschen zijn, en vooral waarvan dat trekken afhankelijk is, weten wij niet. Van het voedsel, dat de verschillende vischsoorten gebruiken, weten wij evenmin iets. En hetzelfde geldt van hunne voortplanting, van de wijze waarop en de plaats waar de eieren gelegd worden, van de gewoonten en het voedsel der jonge larven, van de mogelijkheid van kunstmatige vischteelt, van hunne levensgewoonten. Practisch is van geen enkele der in dit rapport genoemde vischsoorten de levensloop geheel bekend, van slechts enkele fragmentarisch, van de allermeeften weten wij niets. En niet alleen, dat wij van hunne normale levensverhoudingen zoo weinig weten, maar ook van hunne vijanden, vooral wat betreft de larven en de jonge dieren, van de parasieten, die bij hen voorkomen, van de ziekten, die hen kunnen treffen, weten wij in de allermeeften gevallen niets. Het behoeft geen nader betoog, dat dit alles niet bevorderlijk is voor de ontwikkeling van het visscherijbedrijf op een rationeelen grondslag, doch ook, dat nog jaren van nauwgezet onderzoek noodig zijn, om over al deze vragen eenig licht te verspreiden.

Report on the Fishes

collected by

DR. J. BOEKE

in the Dutch West Indies 1904—1905.

With comparative notes on marine fishes of
Tropical West Africa

by

DR. J. METZELAAR





PART I.

(West Indian Fishes).

PREFACE.

In the years 1904—1905 Dr. J. Boeke, now professor of embryology at the University of Utrecht, undertook a voyage for the Government of the Netherlands to the Dutch West Indian colonies for the study of the fisheries on the Islands. He visited Curaçao, Aruba, Bonaire (Leeward-Islands) and St. Eustatius, Saba, St. Martin (Windward-Islands) and published the results in a report, containing a preliminary examination concerning the condition of the fisheries and the manufacturing of marine products in the colony of Curaçao; (Hague, Belinfante 1907).

The present paper is part of the second volume of this Report. I had the opportunity to publish it as professor Boeke did me the honour of entrusting me with the study and classification of his valuable collection, the more valuable since he was the first Dutch explorer who made regular systematic collections of marine fishes of our West Indian Islands.

Some 30 years ago a Dutch expedition to Surinam brought home some material from Curaçao and Aruba (collection Mr. Neervoort van de Poll); only 9 species are enumerated by Dr. Th. W. van Lith de Jeude in the Notes of the Leyden Museum, IX 1887 p. 129. A little more was known of St. Martin, Dr. R. E. van Rygersma having collected there the material on which is chiefly based the paper of Cope: Contribution to the Ichthyology of the lesser Antilles, in Transactions American Philosophical Society, Philadelphia XIV 1871 p. 445.

Some small collections, occasionally brought together by different travellers have been incorporated here with the bulk. Special mention should be made of some scores of very fine fishes collected by Mr. De Weger, officer of the Royal West Indian Mail Cy. from Trinidad, Venezuela, Haïti and other Islands of the West Indian Archipelago in 1907. This excellent collector was drowned 3 years

afterwards. As the localities referred to, although politically partly separate from the Dutch possessions, form a zoogeographical unity with them, we have also incorporated this material with the rest.

The Classification, then, of this mixed collection was initiated first by Miss Pynacker Hordyk, biological student of the Amsterdam University, and by professor Max Weber, under whose kind directions I concluded the work in August of 1917. Owing to particular circumstances the publication of the report by the Government was delayed until now. Therefore papers on the subject of the classification of the W.I. fishes, which appeared after that date (August 1917) could not be taken into consideration in this report. Besides to prof. Weber himself I also owe very much to Mr. B. W. Evermann and Mr. C. Tate Regan to whom I am indebted for their kind assistance.

Special mention should be made of the fine drawings of Mr. Obbes, who is well known for his tasteful execution of scientific illustrations.

On the whole the current names have been adopted. In those cases where well-established genera are subdivided at present by American authors these units have been reduced to the rank of subgenera, the names being added between brackets.

The system adopted is that of Boulenger (the Cambridge Natural History, Vol. VII 1910).

„Length” to be reckoned up to the root of the caudal rays, except when indicated in an other way — „Interorbital” means: the bony interorbital space. — D. . . . $\frac{1}{2}$ or: A. . . . $\frac{1}{2}$ means that the last ray of the fin is split.

„Colour” usually means the colour in spirits: Most of the fishes have been put immediately into a rather strong alcoholic liquor in which the colours have suffered very much. Those fishes collected by Mr. De Weger are in a better condition, as they have passed through a formaline-bath

The letters L. or W. behind the vernacular names mean that the word is used on the Leeward or Windward Islands respectively.

SYSTEMATIC ACCOUNT.

PLAGIOSTOMATA.

ASTEROSPONDYLI.

1. *Ginglymostoma cirratum* Gmelin.

Ginglymostoma cirratum, M. H. Plagiost (1), p. 23; Günther, Catalogue Fishes VIII, p. 408; Evermann & Marsh, Bull. U. S. Fish Commission for 1900, vol XX; Fishes of Portorico, p. 60; Garman, Mem. Mus. Harvard XXXVI, p. 54, pl. 7.

One female of 60 cM. was collected in Marigot-Bay, St. Martin.

A large shark, very common in the West Indies, recorded by Garman from New-York.

2. *Mustelus laevis* Risso.

Mustelus laevis, Günther, Catalogue Fishes VIII, p. 385; Müller & Henle, p. 190, pl. 27.

Galeorhinus laevis, Garman, op. cit. p. 176.

Mustelus canis, Jordan & Evermann, Fishes of North & Middle America, p. 29.

a. One adult female of 90 cM. Width pectoral $\frac{3}{4}$ in length, its outer angle sharp, like that of the other fins. Base of first dorsal little more than 2 in interdorsal space — teeth with notch in the outer margin, as figured by Müller & Henle, pl. 27 fig. 2.

Colour: Tail coloured uniformly.

b. Two embryos of 25 cM.

Distance between corners of mouth $1\frac{1}{4}$ — $1\frac{2}{9}$ in praeoral snout. Width of pectoral $1\frac{1}{3}$ in its length. Base of second dorsal $2\frac{3}{5}$ in distance from first dorsal. Height of first dorsal nearly equal to

(1) For abbreviations of papers cited see list of literature at the end.

its base. Tail 5 in total length. Its hind lobe 3 in length of tail. — The teeth show the broad form and the small, blunt, nearly obsolete denticles on both sides of the median cusp, as figured by Garman on plate 4.

Colour: Tips of dorsals black. No black edges or blotches on caudal fin.

Bonaire, Summer. Sold in the market at Curaçao to the poor, July—October.

Nomen indig.: *tribon*, a corruption of the Spanish *tiburón*.

Habitat: Both sides of Atlantic.

3. *Carcharias (Scoliodon) terraenovae* Richardson.

Squalus (Carcharias) terraenovae, Richardson, Fauna Bor. Amer. III, p. 289, 1836.

Carcharias terraenovae, Günther, Catalogue Fishes VIII, p. 360.

Scoliodon terraenovae, Jordan & Evermann, l. c. I, p. 43; Garman, op. cit., p. 115.

Carcharias eumeces, Pietschmann, Jahrb. Nassauer Verein Naturk. 1913, p. 172 (Cameroon).

a. 3 Juv. of 39—40 cM. with a pore-like remnant of the spiracle still visible. Middle of eye equidistant from tip of snout and first gilleleft.

Saba-bank, August 15 fathoms.

b. 1 Juv. from Puerto Cabello collected by Mr. De Weger Jan. 1907.

c. Embryos of 14—14½ cM. from Curaçao and from Port of Spain, Trinidad.

Tail little more than ¼ of total length.

In all these specimens the black margin of the caudal fin extends along the upper lobe only, but there may be a dusky blotch on the lower one.

Nomen indig.: *tribon*.

Habitat: According to Garman (l. c. p. 115) *C. terraenovae* ranges from Labrador to Brazil. It also occurs on the African coast.

Besides there occur at Curaçao 2 other large sharks, the „tribon ala secu” (= „with dark fins”) and „tribon baké”, of which we have got no material.

BATOIDEI.

PRISTIDAE.

4. *Pristis pectinatus* Ltk.

Pristis pectinatus, Günther, Catalogue Fishes VIII, p. 437;
Jordan & Evermann, l. c. I, p. 60; Garman, l. c., p. 262.

According to information of Mr. Van der Gen, occurring at
Curaçao, where it is called by the dutch name *Zaagvisch*.

RHINOBATIDAE.

5. *Rhinobatus horkelii* M. H. (?)

Rhinobatus horkelii, Müller & Henle, p. 122, pl. 41; Garman,
l. c., p. 280.

One juv. of 28 cM., the exact locality of capture in the W. Indies
not given; probably from St. Eustatius.

Mouth $2\frac{2}{5}$ in praeoral snout.

Colour: Very pale brown. No white spots. Snout white. Vertical
fins dusky.

Habitat: Recorded by Garman from Brazil (Thayer Exp.).

TRYGONIDAE.

6. *Trygon hastata* De Kay.

Trygon hastata, De Kay, N. Y. Fauna Fishes, p. 373.

Dasyatis hastata, Jordan & Evermann, op. cit. I, p. 83.

Dasybatus hastatus, Garman, l. c., p. 391.

a. One specimen from Tumble down Dick bay, St. Eustatius,
not deeper than 4 fathoms, a female, probably not yet adult, of
74 cM. total length. Width of disk 34 cM. Disk to end of pectoral
 $1\frac{1}{4}$ in width. Disk to anus 2^{+} in rest of body. No projecting snout
Ventrals almost entirely covered. A low keel on top of tail and a
deep fold below. Ventral tail-wing 3 in tail. Median line of back
with 5 small blunt spines anteriorly only. Tail roughened from tip
of spine backwards by small asperities. No other spines anywhere.
3 Buccal papillae and 1 rudimentary lateral pair. 35 Rows of
flattened teeth in lower jaw.

Colour: brownish gray with numerous small white dots.

b. 1 juv., female from St Martin, September, disk width of 24 cM. Length of disk to end of pectoral $1\frac{1}{6}$ — $1\frac{1}{7}$ in width. Length to anus $1\frac{1}{2}$ in tail, which seems to be broken. Back with only 3 small blunt spinules anteriorly: a few very small rough scales on end of tail only.

N.B. The determination of this Trygon is rather dubious; but for the blunt snout we should range it under Trygon gymnura Müll. The weak development of the spines is at all events remarkable.

Habitat: Occurs from Rhode Island to Brazil.

7. *Pteroplatea micrura* Schn.

Raia micrura, Schneider, Bloch, Ichthyologie 1801, p. 360.

Pteroplatea macrura, Günther, Catalogue Fishes VIII, p. 487.

" " Jordan & Evermann, l. c. I, p. 86.

" *micrura*, Garman, l. c., p. 414.

Praeoral snout equal to distance between outer borders of eyes. No caudal spine. Width of disk 27 cM. Its length to hind border of pectoral fin 15 cM.

One specimen captured by Mr. De Weger at Trinidad. It seems to occur also at Curaçao, being called *Manta*.

Habitat: from Long Island to Brazil.

Sting-rays are very common about the Leeward Islands. There also seems to occur a kind of „Chucho” at Curaçao, which is probably identical with that of St. Martin. However as the collection does not contain any further specimens of rays we are not able to decide that.

TELEOSTEI.

ALBULIDAE.

8. *Albula vulpes* L.

Albula conorynchus, Bl. Schn. System. Ichtyol. 1804, p. 432.

" *vulpes*, Jordan & Evermann, l. c., p. 411; Evermann & Marsh, Fishes Portorico, p. 82, fig. 12.

Four specimens from Simsons bay lagoon, St. Martin and other

localities about the Windward- and Leeward Islands; not much used as a food-fish, being not very common.

Nomen indig.: *banana*, *harmanchie*.

Habitat: Cosmopolitic.

9. *Albula nemoptera* Fowler.

Dixonia nemoptera, Fowler, Proc. Academy Natural Sci. Philad. LXII 1910, p. 651, Santo Domingo. West Indies.

Head $2\frac{2}{5}$ in length. Eye 5. Snout $2\frac{1}{2}$ in head. Maxilla $2\frac{1}{7}$. Longest dorsal ray $17\frac{1}{8}$.

D. 19, I; A. 7, I; L. l. 76; L. tr. 7—9.

A single specimen collected at Puerto Cabello by Mr. de Weger. Length 26 cM.

Mr. Fowler gives a very detailed description of a much larger specimen, but the exact proportions of head-length and depth compared with length of body are not given. There appear no evident reasons to establish a separate genus for this typical new *Albula*.

ELOPIDAE.

10. *Elops saurus* L.

Elops saurus, Günther, Catalogue VII, p. 470; Jordan & Evermann, l.c. I., p. 410; Evermann & Marsh, Fishes Portorico, p. 81, fig. 11.

Dorsal fin inserted somewhat before ventral.

Specimens captured in February (Curaçao) had a length of 18— $18\frac{1}{2}$ cM.; in May they were already $41\frac{1}{2}$ cM.

Not important as a food-fish.

Nomen indig.: *Macambie* (L.); *tenpounder* (W.).

Habitat: common on both coasts of America, practically cosmopolitic.

CLUPEIDAE.

11. *Jenkinsia lamprotaenia* Gosse.

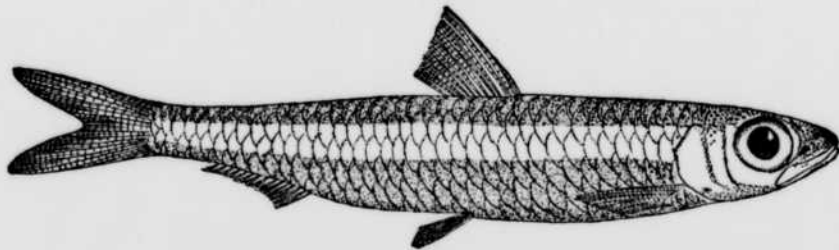


Fig. 1. *Jenkinsia lamprotaenia* Gosse $\times 1.7$.

Clupea lamprotaenia, Gosse, Naturalists Sojourn Jamaica, p. 291.

Spratelloides lamprotaenia, Günther, Catalogue VIII, p. 465.

Head $3\frac{3}{4}$ in length. Depth $6-6\frac{1}{2}$. Maxillary reaching to front of pupil. Front of dorsal nearer to base of caudal than to tip of snout.

D. 12—13; A. 15.

Colour: a triple dot-line before, a double one behind the dorsal fin.

One of the smaller and less common Clupeids. Captured near the Leeward Islands (Curaçao, Lac Bonaire) where it reaches a length of 65 mm. and near St. Eustatius, where it is more estimated than in the former localities. March—August.

Nomen indig.: *sprat* (W.).

Habitat: Known from Jamaica and Portorico.

12. *Sardinella anchovia* C. V.



Fig. 2. *Sardinella anchovia* C. V. $\times \frac{4}{5}$.

Sardinella anchovia, Cuv. Val. Hist. Nat. Poissons XX, 1847, p. 269.

Clupea anchovia, Günther, Catalogue VII, p. 421.

Sardinella anchovia, Jordan & Evermann, op cit. I, p. 429.

Occurs from March—July near the reefs of Curaçao and in its harbour, where it reaches a length of $12\frac{1}{2}$ cm.; also caught about St. Eustatius, August, in the harbour.

Nomen indig.: *Ansjovis* (L.); *black sprat* (W.).

Habitat: From Martinique to Brazil.

13. *Sardinella clupeiola* C. V. (?)

Harengula clupeiola, Cuv. Val. l. c. XX, p. 289, Guadeloupe.

Sardinella clupeiola, Jordan & Evermann, l. c. I, p. 429.

One specimen from Haïti, coll. De Weger, 16 cM., the material being insufficient for an exact determination.

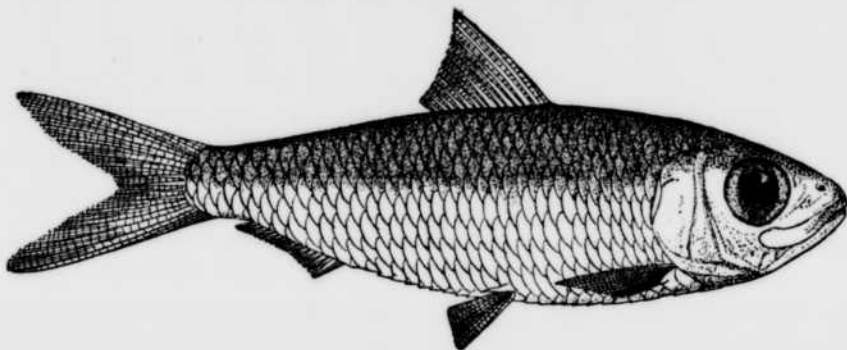
14. *Sardinella sardina* Poey.

Fig. 3. *Sardinella sardina* Poey. $\times \frac{4}{5}$.

Harengula sardina, Poey Memorias II, p. 310, Cuba.

Sardinella sardina, Jordan & Evermann, l. c. I, p. 430.

Specimens from Fuikbay, Curaçao and Punta brabo, Aruba, June—July, Length up to $13\frac{1}{2}$ cM.

Nomen indig.: *Sprat*.

Habitat: Throughout the West Indies, North to Florida, very common.

15. *Sardinella humeralis* C. V.

Harengula humeralis, Cuv. Val. l. c. XX, p. 293.

Clupea humeralis, Günther, Catalogue VII, p. 422.

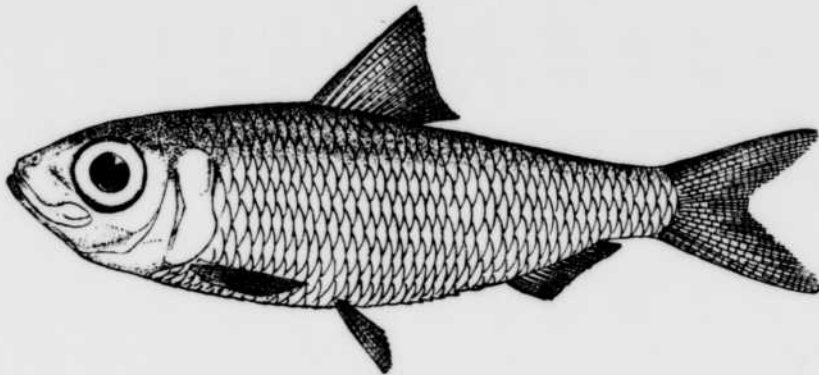
Sardinella humeralis, Jordan & Evermann, l. c. I, p. 431.

Collected in April—June at Curaçao and in August at St. Eustatius. Length up to 14 cM.

The commonest of sprats. Some specimens were judged by the negroes to be poisonous, which seems to be very dubious.

Nomen indig.: *Sprat*.

Habitat: From Florida to Brazil.

16. *Sardinella macrophthalmus* Ranz.Fig. 4. *Sardinella macrophthalmus*, Ranz., nat. size.

Clupea macrophthalmus, Ranzani, Nov. Comm. Ac. Sci. Bonon. V, p. 320. Brazil; Günther, Catalogue Fishes VII, p. 421.

Sardinella macrophthalmus, Jordan & Evermann, I, p. 430.

Specimens collected at Curaçao (March—July) and at St. Eustatius (August) at a depth of 1 fathom along the shore, reaching a length of 11½ cm.

Nomen indig.: *Sprat*.

Habitat: From Cuba to Brazil, not very common.

These Sardines form a commercial object of some importance. They are sold in thousands in the market of Curaçao, specially in June.

17. *Opisthonema thrissa* Brown.

Clupea thrissa, Günther, Catalogue Fishes VII, p. 8.

Opisthonema oglinum, Jordan & Evermann, I, p. 432.

Caught in May and September with canoes in small quantities near Curaçao, in August at St. Eustatius. Reaches a length of 29 cm. No important food-fish, though it is the largest of local Clupeids.

Nomen indig.: *Haring*.

Habitat: from Florida to Brazil.

18. **Engraulis (Stolephorus) brownii** Gmelin.

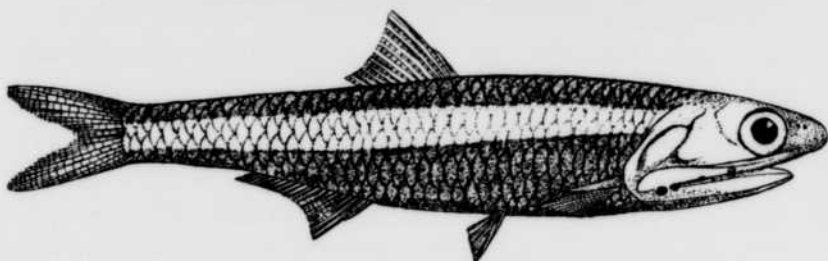


Fig. 5. *Engraulis brownii*, Gmel. $\times 1.8$.

Engraulis brownii, Günther, Catalogue Fishes VII, p. 389.

Stolephorus brownii, Jordan & Evermann, l. c. I, p. 443.

Depth $4\frac{2}{3}$ – $4\frac{4}{5}$ in length. Eye $4\frac{1}{4}$ in head. A. 20.

Colour: Silvery band very sharply defined.

Collected in August at St. Eustatius, strand, 1 fathom. Length up to 62 mm. Caught the whole year round; does not grow any larger. Brazilian specimens in our Museum have a length of 9 cm.

Habitat: from Cape Cod to Brazil; the commonest of anchovies, therefore its failing about Curaçao is a little surprising; Real anchovies were never seen in the local market.

SILURIDAE.

19. **Felichthys felis** L.

Felichthys marinus, Günther, Catalogue Fishes V, p. 178; Jordan & Evermann, l. c. I, p. 118.

Ailurichthys marinus, Eigenmann, South american Nematognathi. Calif. Acad. Sci. 1890, p. 36.

One fine specimen of 40 cm. from Trinidad, collection De Weger.

20. **Felichthys bagre** L.

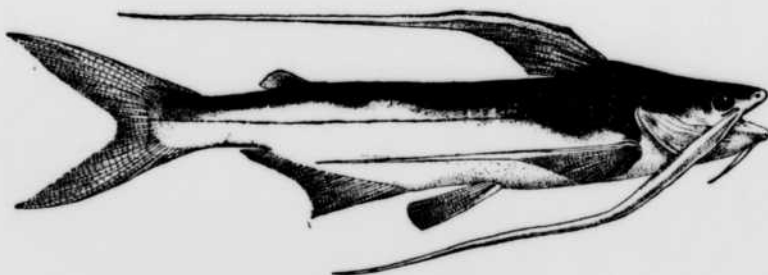


Fig. 6. *Felichthys bagre* L. $\times \frac{1}{4}$.

Ailurichthys bagre, Eigenmann, op. cit. supra, p. 83.

Felichthys bagre, Jordan & Evermann, l. c. I, p. 117; Eigenmann, Fresh water Fishes of British Guiana, Memoirs Carnegie Mus. V. 1912, p. 133.

One fine specimen Head $4\frac{4}{5}$. Greatest depth $4\frac{2}{5}$. Greatest width of head $1\frac{1}{7}$ in its length, $5\frac{1}{3}$ in length of fish. Distance from dorsal to tip of snout $3\frac{3}{4}$ in length. Eye $2\frac{1}{2}$ in snout, 4 in interocular space, 6 in head. Maxillary barbel reaching middle of anal fin. Gillrakers weak, $2 + 6$. Vomerine patch of teeth nearly separate from palatine patch. Dorsal spine 1 in head, granulated in front, its filament reaching end of central caudal rays. Longest anal rays a little less than half its base. Last anal ray $\frac{1}{3}$ length of longest ray. Pectoral spine $1\frac{1}{2}$ in head.

D. I, 7; A. 34.

Colour: Anal lobe with a black blotch.

Length: $40\frac{1}{2}$ cM. Georgetown, Coll. De Weger, Nov. 1906.

Habitat: Coasts and streams of South America.

ANGUILLIDAE.

21. *Conger vulgaris*. L.

Conger vulgaris, Günther, Catalogue Fishes VIII, p. 38.

Leptocephalus conger, Jordan & Evermann, l. c. I, p. 354; Evermann & Marsh, l. c. p. 70, fig. 6.

One specimen from Curaçao, May; 80 cM.

The occurrence here of the common congereel is nothing extraordinary, since the species is almost cosmopolitic.

22. *Leptocephalus spec.*

In Jenkins bay, St. Eustatius, 22th August a leptocephaluslarva was caught, at a depth of 12 fathoms, absolutely pellucid.

23. *Chilorhinus svensonii* Lütken.

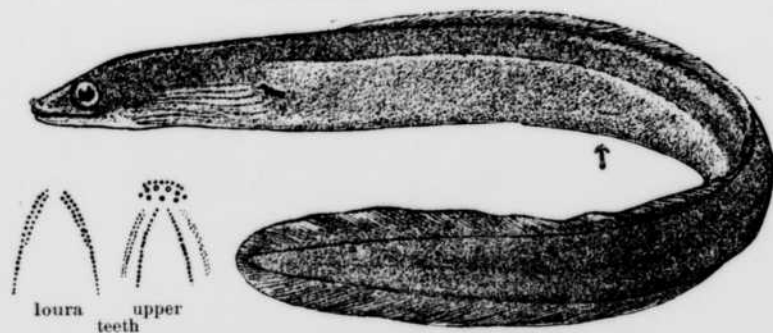


Fig. 7. *Chilorhinus svensonii* Lütken. Nat. size.

Chilorhinus svenssonii Lütken. Vidensk Meddel. Nat. Foren Kjöbenhavn 1. 1851; Cope, Trans. Am. Phil. Soc., 1870, p. 482; Günther, Catalogue Fishes VIII, p. 51; Jordan & Evermann, l. c. I, p. 372.

Head $1\frac{1}{2}$ in trunk, depressed. Head + trunk $12\frac{2}{7}$ — $12\frac{2}{9}$ in rest of body. Depth 12 in total. Tail little longer than trunk. Eye $1\frac{1}{3}$ in fleshy interorbital which is equal to snout. Snout 6 in head. Bony interorbital equal to pupil. Buccal cleft 4 in head, reaching posterior border of eye. Anterior nostrils tubular; posterior nostrils inside upper lip.

Teeth: nasal patch forming a transverse oval with 5 stronger teeth centrally and a row of smaller ones more anteriorly.

Vomerine teeth absent. Maxillary teeth small, biserial; pterygoidal larger, uniserial. Mandibular teeth biserial in the foremost part only, closely set. Lips well developed, of lower jaw best, forming a large, free fold alongside the mouth.

Insertion of dorsal midway between centre of eye and vent, vertical fins well developed, their height increasing caudad.

The anterior parts before dorsal are ornated with longitudinal ridges, more or less prominent.

Colour: A plain sandy brown tinge, made up of innumerable small dots all over the body. Belly silvery anteriorly; a very narrow pale margin to caudal fin. In some specimens the limit between the dark upper pale under parts of head is extremely sharply defined, the demarcation-line just touching the eye. Youngest specimens darkest. A narrow dusky edge to fins in a few specimens, not characteristic.

Several specimens dredged at St. Eustatius, August, at a depth of 3—8 fathoms, at a distance of 100—500 M. from the coast. Also a few from Curaçao, reaching a length of 18.5 cM. August-October and called there „colebra blanco”.

Habitat: Known only from St. Croix, West Indies.

The indication: „the anus measures the anterior two fifths of the length” of Cope, copied by Jord. Everm., as: „Head and trunk forming $\frac{2}{3}$ of the total length”, is apparently incorrect. The anus is much nearer to the middle and the original formula of Lütken: „Tail somewhat longer than body” is more correct.

24. *Ophichthys oculatus* Kaup.

Pisodonophis oculatus, Kaup, Apodes 22, 1856 Curaçao.

Ophichthys pardalis, Günther, Catalogue Fishes VIII, p. 82.

Myrichthys oculatus, Jordan & Evermann, l. c. I, p. 376.

Head $3\frac{5}{6}$ in trunk, 8 in tail. Eye 2'' in snout. Snout $3\frac{1}{2}$ in distance from tip of snout to dorsal. Cleft of mouth $3\frac{3}{4}$ i. h.

Colour: as given by Jordan & Evermann, but there are 25, not 35 ocellated spots in a row (printing mistake?).

One specimen from the „playagrandi” of Wacão, Curaçao, also known from St. Martin (*Pisodontophis latimaculatus* Cope, Trans. Am. Phil. Soc., 1870, p. 482).

Nomen indig.: *Colebra pienta* (pienta = spotted).

Habitat: throughout the West Indies; also recorded from the West African coast.

25. *Ophichthys acuminatus* Gronow.

Muraena acuminata Gronow, Fishes Brit. Museum, p. 21.

Ophichthys acuminatus, Günther, Catalogue Fishes VIII, p. 83.

Myrichthys acuminatus, Jordan & Evermann, l. c. I, p. 376.

Head $3\frac{1}{2}$ in trunk. Head + trunk $1\frac{1}{2}$ in tail. Snout 6 in head. Buccal cleft $3\frac{1}{5}$ in head. Eye 2'' in snout. Beginning of dorsal equidistant to center of eye and to pectoral. Skin of head much folded longitudinally.

Colour: 38 yellow spots in a row. Dorsal rather pale with a submarginal darker band. Snout with numerous small white spots.

One specimen from Lac Bonaire.

Nomen indig.: *Colebra macamba* by the fishermen (Macamba = Holland).

Habitat: throughout the West Indies.

26. *Ophichthys havannensis* Bl. Schn.

Ophichthys havannensis, Günther, Catalogue VIII, p. 67.

„ „ „ Jordan & Evermann, op. cit. I, p. 382.

? *Ophichthys ophis* (L.), „ „ op. cit. III, p. 2804.

Head $8\frac{1}{2}$ in total. Tail $1.26 \times$ rest of body. Eye 2 in snout. Buccal cleft $2\frac{1}{3}$ in head. Teeth in lower jaw uniserial save 3 teeth in the front part of this row at its inner side, on both sides.

One specimen, taken in the sea outside the harbour of Curaçao. Length 1.21 M.

Nomen indig.: *Colebra macamba*.

Habitat: not common in the West Indies.

27. *Ophichthys gomesii*. Castelnau, var. *macrurus*. Poey.

Ophichthys gomesii, Günther, Catalogue VIII, p. 60; Jordan & Evermann, l. c. I, p. 384.

Head + trunk 2 in tail.

Head $2\frac{1}{2}$ in trunk. Eye $1\frac{2}{5}$ in snout. Teeth biserial on vomer and jaws.

Dorsal inserted nearer to end of pectoral than to middle. Pectoral $2\frac{5}{8}$ in head, equal to cleft of mouth. Gill-cleft $2\frac{2}{3}$ in pectoral.

Two specimens of 55 and 75 cM. from the Piescaderabay, Curaçao.

Nomen indig.: *colebra blanco*.

Habitat: common from Florida to Brazil.

28. *Moringua* spec.-(nov.)



Fig. 8. *Moringua* spec. $\times 2.5$.

There occurs near Curaçao a small eel which belongs undoubtedly to the genus *Moringua* Gray. A very small specimen (13.5 cM.) was captured (18—VII) in the Cornelis-bay, showing the following characters.

Habitus worm-like. Head 5 in trunk, $3\frac{3}{4}$ in tail; tail about $=\frac{1}{2}$ trunk. Eye $1\frac{4}{5}$ in snout; snout $6\frac{1}{2}$ in head. Buccalcleft reaching posterior border of eye. Upper jaw 5 in head. Distance from beginning of dorsal fin to vent $1\frac{3}{4}$ in head. Dorsal and anal short; on tail only. Base of anal fin $\frac{1}{3}$ length of tail, dorsal beginning and ending a trifle behind it, neither of them continuous with the caudal, which is small and pointed. Pectoral relatively well developed, $4\frac{1}{2}$ in head. Branchial slit as wide as the pectoral base immediately before it.

Colour: See figure.

Vernacular name: *angieuw* (pron. angieu).

Habitat: *Moringua* is a typical indo-pacific genus, occurring in half a dozen species from the Riu-Kiu Islands to North-Australia. A separate family has been established for this aberrant form. Its occurrence in the West Indies is very striking. Although we are quite convinced that the species is a new one, we consider it advisable to wait for better material to baptise it. The tiny juv. secured resembles fairly well a young *M. macrochir* Bleeker (Siboga-expedition). If any adult specimen might be found identifiable with the juv. in hand, I should prefer the name *Moringua boekei*.

MURAENIDAE.

29. *Muraena* (*Gymnothorax*) *moringa* Cuv.

Muraena moringa, Cuvier R. A., ed. II, Vol. II, p. 352, 1829.

" " Günther, Catalogue Fishes VIII, p. 120, 1870.

Lycodontis moringa, Jordan & Evermann, Fishes of N. & M. Am. I, p. 395.

" " Evermann & Marsh, Fishes of Portorico, p. 77, fig. 8.

Head $2-2\frac{1}{3}$ in trunk. Cleft of mouth $2\frac{1}{2}$ in head. — Colour: brown marbling on a pale yellow background (which may be reduced to reticulation), extending on fins.

A specimen of 63 cm. from Venezuela, one from the market of Curaçao, both of them captured in March; and another one from Simonsbay lagoon, St. Martin, September.

Habitat: This *Muraena* is the most common eel in the West Indies, ranging from Pensacola to Rio Janeiro.

30. *Muraena* (*Gymnothorax*) *funnebris* Ranz.

Gymnothorax funnebris, Ranzani, Nov. C. Ac. Sc. Inst. Bonon IV, p. 76, 1840; Brazil.

Muraena afra, Günther, Catalogue Fishes VIII, p. 123, 1870.

Lycodontis funnebris, Jordan & Evermann, Fishes of N. & M. Am. I, p. 396.

One very heavy sample was caught at Aruba, reaching a length of 1.14 M.

Head $2\frac{1}{2}$ in trunk. Prae-anal portion $1\frac{1}{9}$ in post-anal. Occi-

pital region very elevated, fleshy. — Eye $2\frac{1}{2}$ in snout. Cleft of mouth $2\frac{1}{3}$ in head. Teeth on vomer and jaws uniserial.

Colour: uniform black with dark gular folds.

Habitat: common on the atlantic (Florida-Rio Janeiro) and pacific coasts of America.

31. *Muraena miliaris* Kaup.

Muraena miliaris, Günther, Catalogue Fishes VIII, p. 100, 1870.

Gymnothorax miliaris, Cope, Tr. Am. Philos. Soc. Philad., 1871, p. 482.

Lycodontis miliaris, Jordan & Evermann, Fishes of N. & M. Am. I., p. 397.

Muraena myrialeucostictus, Fowler, Proc. Philad., 1912, p. 18.

Head $2\frac{1}{4}$ in trunk. Tail $\frac{2}{7}$ longer than rest of body. Eye $1\frac{3}{5}$ in snout, equal to gill-cleft. Cleft of mouth $2\frac{1}{2}$ in head. Borders of posterior nasal openings raised in such a way, that it is difficult to decide whether they are tubulate or not. Four pores in upper jaw.

Teeth: maxillary band biserial for nearly the whole length, 26 in the outer row. Inner row with C 3-4 + 8 smaller ones. Vomerine patch uniserial, with the two anterior ones longer and conical, the outer 11 blunt. Mandibular band partly biserial and with two pairs of depressed canini more inwards (an outer row of small teeth anteriorly).

Colour: Dark brown; head and tip of tail dotted with white points. Gill-cleft black..

The only real difference with the description of Fowlers' *M. myrialeucostictus* regards the number of the mandibular canini.

One specimen of 30 cM. was caught in a pool behind the reef of Curaçao, March 28th.

Habitat: not very common in the West Indies, known from St. Martin (Cope).

32. *Muraena (Priodonophis) ocellata* Agass.

Gymnothorax ocellatus, Agassiz, Spix. Brazil, p. 91, pl. 50, b. '28.

Muraena ocellata, Günther, Catalogue Fishes VIII, p. 102, 1870.

Lycodontis ocellatus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 399.

Head $1\frac{2}{3}$ in trunk, $3\frac{2}{5}$ in tail. Eye $1\frac{1}{2}$ in snout. Cleft of mouth $1\frac{3}{4}$ in head. Vomerine teeth typically wanting.

N.B. The original description is derived probably from juvenile specimens. Ours are of 45—52 cM., caught at a depth of 50—60 M. near the coasts of Venezuela and Curaçao by Mssrs. De Weger and Leendertz. (January).

Habitat: This eel is abundant from Florida to Rio Janeiro

33. *Muraena spec. (nov.)*.

In the „lake” of Bonaire on the 10th of July a small moray was captured (7 cM.) between the algae. It agrees best with the young of 2 inches, described by Evermann & Marsh under the name of *Lycodontis albimentis*, Portorico. However I do not feel justified to found a new species on such a poor material.

Head 7 in rest of body. Eye 2 in cleft of mouth. Height of fins rather considerable, increasing backwards. Teeth in upper jaw uniserial, (at least posteriorly). Vomerine patch of teeth with two larger anterior ones, continued backwards as a uniserial row of smaller ones.

Colour: dark brown, marbled with yellow; chin pale; a continuous pale edge to vertical fins.

Cf. Evermann & Marsh, Fishes of Portorico, Bull. U. S. Fish Commission Vol. XX, 1900, p. 78.

34. *Gymnomuraena nectura* (Jord. & Gilb.).

Gymnomuraena nectura, Jordan & Gilbert, Proc. U. S. Nat. Mus., 1882, p. 356, Gulf of California.

Uropterygius necturus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 404.

Tail $\frac{2}{11}$ th longer than trunk + head. Head $3\frac{1}{2}$ in trunk. Buccal cleft $2\frac{1}{2}$ in head. Anterior nostril with a tube, posterior one with a short tube over the eye. A series of 5 pores in each jaw, one pair just between the corresponding nostrils, and one at the inner side of the anterior nostril.

Teeth: in jaws biserial; in the outer rows small, closely set, in the inner rows they are long, weak, depressible, caniniform, widely set.

Tail with a small, but distinct caudal fin, best developed on dorsal side.

Colour: uniformly brown; lower side of throat with white bars and spots. Upper lip blotched black-and-white.

Three specimens captured at Bonaire, in the „lac” and before the quay, July; 19—20 cM. The typical specimen came from the pacific coast and this is the corresponding atlantic form, so there are certain divergencies between them, which are, however, not to be judged important enough to allow specifical separation. The muraenidae are not so strictly specifically localised as might be anticipated from their living habits as shore-fishes.

35. *Echidna catenata* Bloch.

Gymnothorax catenatus, Bloch, Ausl. Fische XII, p. 74, 1795.

Muraena catenata, Günther, Catalogue Fishes VIII, p. 130, 1870.

Echidna catenata, Cope, Tr. Am. Philos. Soc., 1871, p. 482, St. Martin.

„ „ „ , Jordan & Evermann, Fishes of N. & M. Am. I, p. 403.

A rather large number of this morays was captured at different oints of the Curaçao coast (in tidal pools in the coral reef), and at Bonaire. March—August.

Nomen indig.: *oromanie*; or *colebra di awa* (i. e. water snake).

Habitat: The species, common from the Bermudas up to the shore of Guyana is the most abundant of local morays, and reaches here a length of 60 cM. Its tinge varies from a pale brown to deep black.

SCOPELIDAE.

37. *Saurus (Synodus) intermedius* Agass.

Saurus intermedius, Agassiz, Spix. Pisc. Brasil, p. 81, 1828.

„ „ „ Günther, Catalogue Fishes V, p. 396, 1864.

Synodus intermedius, Jordan & Evermann, Fishes of N. & M. Am. I, p. 535, (probably young specimens).

D. 12; A. 11—12. L. l. 48.

Head 4. Depth 6 (!). Eye $5-5\frac{3}{5}$. Interorbital $4\frac{1}{3}-6$ i. h., concave. Snout broader than long, much longer than eye. Dorsal little longer than high. Pectoral reaching 9th scale of linea lateralis. Ventral reaching 11th median scale.

Caught at Curaçao; March—April. Length up to 27 cM.

Nomen indig.: *leguana di awa* (L.) (awa = water). Not sold in the market.

Habitat: ranging from Florida to Brazil; also in the Indo-Pacific (Günther).

37. *Saurus* (*Synodus*) *synodus* L.

Saurus synodus, Cuvier & Valenciennes, Histoire Nat. Poiss. XXII, p. 477, (1849, p. 354); *partim*.

Synodus synodus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 536.

D. $12\frac{1}{2}$; A. 9; P. 14; V. 8; Scales $4\frac{1}{2}$ —55 (56)—6 (7).

Head $3\frac{4}{5}$. Eye $5\frac{1}{3}$. Snout 4. Pectoral 2. Head a little rough only; interorbital practically smooth. Palatine teeth in a band, those of the inner row by far the longest. Pectoral reaching past origin of ventrals.

Colour: five dark crossbands alternating with distinct paler ones; black spot at tip of snout.

N.B. It appears that the description of Cuvier & Valenciennes (Ed. 1849, p. 354) is probably based on their specimens from the *Indies*, which they may have united erroneously with the true *S. Synodus* of the american coasts. Jordan & Evermann have based their diagnosis upon *other* specimens out of the collection of Cuvier & Valenciennes, apparently the right ones from Bahia, and it is with the latter that ours agree pretty well. So properly a new name should be given to them, but we prefer to maintain the Linnean name, regarding the newly described french „*Saurus synodus*“, just mentioned as types.

Two specimens from Bonaire and St. Eustatius; 105 and 52 mm. resp. May—September.

Habitat: Ranges from Brazil to the Leeward Antilles.

38. *Saurus* (*Synodus*) *saurus* L.

Saurus griseus, Günther, Catalogue Fishes V, p. 394, 1864.

Synodus saurus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 537.

D. 12; A. 10 (!); P. 12; V. 8 (!) B. 13 (?); Scales $3\frac{1}{2}$ —60—5. Head $3\frac{3}{4}$. Depth $7\frac{1}{2}$. Snout broad. One row of palatine teeth.

Two specimens dredged at Saba (Well Bay, $1\frac{1}{2}$ —8 fathoms), August 25th. Length 11—13.5 cm.

Nomen indig.: *lizard fishes*.

Habitat: from the southern european coasts to the Bermudas, (Goode 1876). Not recorded from Portorico.

The species seems to be rather variable.

39. *Saurus* (*Trachinocephalus*) *myops* Forster.

Saurus myops, Günther, Catalogue Fishes V, p. 398, 1864.

Trachinocephalus myops, Jordan & Evermann, Fishes of N. & M. Am. I, p. 533.

Saurus myops, Weber and Beaufort, Fishes of Indo-austr. Arch. II, 1913, p. 145.

Two juv. dredged off St. Eustatius at a depth of 10 fathoms; 7 cM.

Habitat: abundant, with a wide-stretching range throughout the tropical Atlantic and Indopacific regions.

40. *Saurus* spec. juv.

D. 10; A. 11; Scales 4—49—5 (6).

Head 4. Depth 7. Eye 3 i. h., equal to snout. Pectoral $6\frac{1}{2}$ in length, $1\frac{1}{2}$ i. h. reaching past base of ventral to 12th scale of linea lateralis. Dorsal inserted midway between tip of snout and a point behind adipose and before caudal fin. First ray of dorsal weak, second reaching past tip of last ray. Ventral $12\frac{2}{5}$ in head. No keel visible to lateral line posteriorly.

Colour: little black on shoulder girdle.

The two specimens caught at Trinidad by Mr. de Weger reach a length of only 4 cM. They agree best with *S. poeyi*, Jordan.

N.B. The failing of *S. foetens* Linn., which is so common in the West Indies, up to the Brazilian coast, is a rather striking fact.

41. *Saurida gracilis* Q. G.

Saurida nebulosa, Cuvier & Valenciennes, l. c. XXII, 1849, p. 504.

" " Günther, Catalogue Fishes V, 1864, p. 399.

" *gracilis*, Weber & Beaufort, Fishes Indo-austr. Arch. II, p. 143.

D. 11; A. $9\frac{1}{2}$; P. 13; V. 8; Scales $4\frac{1}{2}$ —55—6. R. Br. 13.

Head $3\frac{3}{4}$ i. l. Depth $7\frac{1}{3}$. Eye $4\frac{2}{3}$. Mouth can be shut completely. Teeth on palate in two rows, the inner largest. Small adipose eyelids. 17 scales before dorsal. Dorsal midway between snout and

adipose fin; its first ray 2 in head. Pectoral reaching 10th scale of lateral line. Outer rays of ventral short, $\frac{1}{3}$ of inner rays, (just as in *Saurus*) their length = length of head.

Colour: no dark spots on fins; body with nine half-crossbands, (very much discoloured).

One specimen of 8 cM. dredged off St. Eustatius, September 17th.

Habitat: This is the first time so far as I know, that species of the genus *Saurida* are recorded from the West Indies. We have compared it with several Indian specimens; it differs chiefly from them in having a more saurus-like ventral fin (a feature also occurring in some indian *Saurida* tumbil-specimens according to a specimen in our collection, determined by Mr. de Beaufort), but the other characters, specially that of the palatine, prove it to be rightly placed among the *Sauridae*.

42. *Saurida tumbil* Bl.

Salmo tumbil, Bloch, Ausl. Fische IX, 1795, p. 112.

Saurida tumbil, Günther, Catalogue Fishes V, 1864, p. 400.

" " Weber & Beaufort, Fishes Indo-austr. Arch. II, p. 142.

D. 11; A. 11; P. 13; L. l. 55.

Head 4. Depth $5\frac{1}{2}$. Eye $2\frac{4}{5}$, with a distinct adipose eyelid. Dorsal midway between snout and end of adipose fin, its longest ray equal to head without snout. End of adipose fin-insertion before that of anal. Pectoral reaching 10th scale of lateral line. Ventral $1\frac{3}{7}$ in head, the inner rays not prolonged, the fin showing typical saurida-features in contrast with the former species. Teeth: palatine with two rows, the inner the shortest. Tongue toothed.

Colour: eight faint crossbars stretching across body, one on base of caudal; dorsal and caudal fin dotted.

One specimen from St. Eustatius at a depth of 4—5 fathoms at a distance of 80 M. from the shore; August 21st.

Not known as yet in the Eastern Atlantic.

CYPRINODONTIDAE.

43. *Rivulus marmoratus* Poey.

? *Rivulus ocellatus*, Hensel, Wieg. Arch. XXXIV, 1, 1868, p. 365; (dorsal farther back).

Rivulus marmoratus, Poey, Ann. Hist. Nat. España IX, p. 248, 1880, Cuba.

" " Jordan & Evermann, Fishes of N. & M. Am. I, p. 663.

D. IX; A. 11; L. l. 43.

Head very flat. Depth 2 in length. Ventrals rudimentary.

Colour: pectoral black; caudal ocellus elevated.

Caught March 15th in a tidepool in the reef of Curaçao; up to 5 cM.

Nomen indig.: *matchurie* (papiamento: „matsjoerie”).

Habitat: known from Cuba.

44. *Cyprinodon riverendi* Poey.

Cyprinodon variegatus riverendi, Jordan & Evermann, Fishes of N. & M. Am. I, p. 673.

D. 10; A. 10; L. l. 25.

Occurring at Curaçao as well in the waters of the reef as in the dead waters (María Pompuna), and fresh water (behind St. Jorissbay); March—October. Length up to 45 mM.

Nomen indig.: *barigonchie* (i. e. swollen belly, pap: „barigondsjie”).

Habitat: known from Cuba and Florida.

45. *Poecilia vandepolli* van Lith de Jeude.

? *Girardinus guppii*, Günther, Catalogue Fishes VI, p. 353, 1866.

Girardinus vandepolli, van Lith de Jeude, Notes from Leyden Museum, IX, 1887, p. 137, Curaçao: Jordan & Evermann, Fishes of N. & M. Am. I, p. 696.

Girardinus vandepolli arubensis, van Lith de Jeude, l. c. p. 137; Jordan & Evermann, Fishes of N. & M. Am. I, p. 696.

Colour: Male: the shoulder blotch may be nearly or quite visible, or very conspicuous. Lateral stripe reduced to a faint trace or the stripe may be evident. Sometimes the lower row of dots on dorsal fin is confluent, forming a large blotch on its anterior half. In the same way there may be a crossbarring on the caudal half.

Female: Formol-specimens show evident oblique dark streaks on opercle. Dorsal and caudal normally spotted. Several freshwater

specimens show a yellow tinge in both sexes. As a rule the marine ones are paler.

A large quantity (about 170) of these killy-fishes was secured as well in the salt water of the reeves as in the freshwater of St. Jorisbay, Curaçao. It also occurs on Aruba, but not on the Windward-Islands.

Length: up to 35 mM. in male, 95 mM. in female.

Nomen indig.: *Matchurie* (L.).

Habitat: This species is certainly not identical with *Poecilia reticulata* Peters (Monatsber. Berlin. Acad. 1859 p. 412.) (Caracas) as suggested by Jordan & Evermann op. cit. p. 2823. For example the base of the anal fin is contained 5 times in the distance from the caudal (*P. reticulata* 3) there is only one black spot in the male (not 3 like in *P. ret.*) &c. So it is known only from the Leeward-Islands. However I am not able to separate off a distinct variety „arubensis”. Our rich material shows plenty of transitory forms.

AULOSTOMIDAE.

46. *Aulostomus maculatus* Val.

Aulostoma maculatum, Valenc. in Cuv., Illust. Poiss., pl. 92.

„ *coloratum*, Günther, Catalogue Fishes III, p. 536.

„ *maculatus*, Jordan & Evermann, op. cit. I, p. 754;
Evermann & Marsh, p. 105, fig. 20.

Caught principally at Curaçao with canasters in the harbour and the reefwater, April--August; also from Bonaire, a very pale specimen with the ventral spots wanting, July; and from the harbour of St. Eustatius.

Nomen indig.: *Trompet* (L.).

Habitat: from Florida to the Caribbean Sea.

FISTULARIDAE.

47. *Fistularia tabacaria* L.

Fistularia tabacaria, Günther, Catalogue Fishes III, p. 529.

„ *neoboracensis*, Mitchill, Tr. Lit. and Phil. Soc. I,
1815 p. 437, New-York.

„ *tabacaria*, Jordan & Evermann, op. cit. I, p. 757.

Young specimens from Curaçao, June and St. Eustatius, August.

Nomen indig.: *Sweep* (= dutch: „zweep”, = whip).

Habitat: common in the West Indies up to Rio Janeiro.

SYNGNATHIDAE.

48. *Syngnathus robertsi* Jordan & Rutter.

Siphostoma robertsi Jordan & Rutter, proc. Ac. Nat. Sc. Philad. 1897, p. 97, Jamaica; Jordan & Evermann op. cit. III, p. 2837.

D. 21—23; rings 17—18 + 32—33; subdorsal rings 1 + 5—4.

Head 7—8 in total, snout 2 in head. A slight keel on occiput. Found principally at Curaçao (Schottegat) and Aruba (August), but also at St. Martin (August). Length: up to 12½ cM.

Habitat: Known from Jamaica only; a small species.

49. *Syngnathus rousseaui* Kaup.

Syngnathus rousseaui Kaup. Lophobranchii, p. 40, Martinique; Günther, Catalogue Fishes VIII, p. 163.

Siphostoma rousseau, Jordan & Evermann, op. cit. I, p. 767.

" *elucens*, Jordan & Evermann, op. cit. I, p. 768; Evermann & Marsh, op. cit. p. 108.

D. 26; rings 17 + 34; subdorsal rings 1 + 1 + 4.

One specimen caught in the Rakito (Reefwater) of Curaçao; Length 13 cM.

Habitat: Known from St. Lucia, Martinique, Cuba, Portorico.

50. *Syngnathus (Corythoichthys) cayorum* Evermann & Kendall.

Corythoichthys cayorum, Evermann & Kendall, Bull. U. S. Fish Comm., 1897, p. 128, pl. 7, fig. 7, Florida; Jordan & Evermann, op. cit. III, p. 2838; Evermann en Marsh, op. cit. p. 108, fig. 21.

Head 9½ in total. D 20; segments 18 + 27, subdorsal rings 1 + 1 + 3. Head 9½ in total. Depth 13½. Snout very short, 3 in head. Tail a head's length longer than rest of body. A strong occipital crest. Lateral abdominal crest ending on next last abdominal ring, the caudal lateral crest beginning on the following (No overlapping!) Head with a few cirri.

Colour: Snout part with seven brown bands alternating with 7 white ones; Brown, swollen operculum with 5 white lines running in the same direction. A large number of dusky lines on the brown body.

A single well-conserved specimen from the algae of the reef-water, Curaçao, 10 cM.

Habitat: Known as yet only from Florida.

51. **Syngnathus crinigerus** Bean and Dresel.

Siphostoma crinigerum, Bean and Dresel, Proc. Biol. Soc. Wash., II, p. 99. 1884, Pensacola; Jordan & Evermann, op. cit. I, p. 771.

Many specimens caught in the reefwater of Curaçao.

Nomen indig.: *Angieü* (angua = needle).

Habitat: Ranges from Florida to Brazil.

52. **Syngnathus dunckeri**, Nov. spec.



Fig. 9. *Syngnathus dunckeri*, Nov. spec. $\times 3$.

D. 24—25; rings 16—17 + 32; sub dorsal rings 0 + 7, Head 11 in total, Head + trunk $1\frac{5}{8}$ in rest of body.

Egg-pouch occupying the first 19 caudal segments. Snout very short, nearly 3 in head. No occipital keel. Opercle showing a dermal fold from eye to shoulder. Base of dorsal fin $1\frac{2}{3} \times$ head. Abdominal lateral ridge ending on last abdominal ring, where the caudal ridge begins.

Colour: not well preserved; a dull, plain brown.

A little species, the largest adults not exceeding 10 cM., its relations dubious.

Captured at the playa grandi, Curaçao, October; in the lake of Bonaire, July; also in the harbour of St. Eustatius (at a depth of 3—6 fathoms, and at St. Martin. Seems to be rather common.

53. **Hippocampus punctulatus** Guich.

Hippocampus punctulatus, Guichenot, in Sagra, Cuba poiss., p. 174.

Hippocampus guttulatus Günther, Catalogue fishes VIII, p. 202.

" *punctulatus*, Jordan & Evermann, op. cit. I, p. 777; Evermann & Marsh, op. cit. p. 109.

Snout longer than postorbital part of head. Though the colours

are faded, the network of white points is clearly visible as well as the dark brown spots on the dorsal plane of the first 7 post-nuchal segments. Rather large for a Hippocampus.

Several specimens captured in the Jenkins bay of St. Eustatius and in the Simsons bay lagoon of St. Martin, the depth not exceeding 12 fathoms. Occurring also at Curaçao, where it is called *cabai di awa* (= sea-horse).

Habitat: Common in the tropical Atlantic, south to Brazil.

SCOMBRESOCIDAE.

54. *Belone* (*Tylosurus*) *ardeola* C. V.

? *Belona ardeola*, Cuv. Val. XVIII, p. 425, 1846, Martinique.

" *depressa*, Günther, Catalogue fishes VI, p. 235.

" *lovii*, Günther, Catalogue fishes VI, p. 236.

Tylosurus ardeola, Jordan & Evermann, op. cit. I, p. 713.

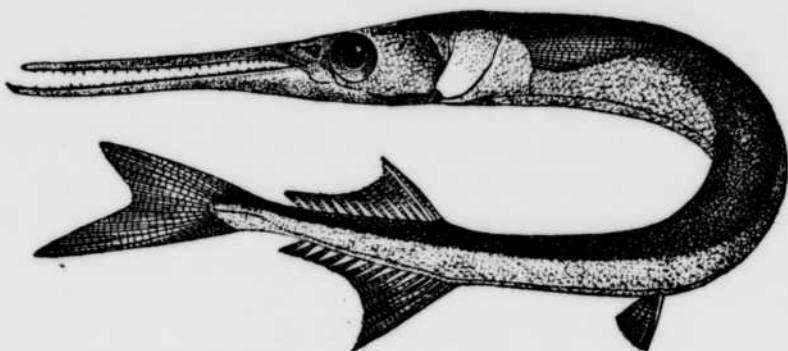
D. 12—13, A. I, 16—18.

Head 3, Eye $1\frac{1}{2}$ — $1\frac{3}{4}$, in postorbital part of head, larger than interorbital in specimens of 35 cm. Interorbital markedly concave, due to the raised orbital borders, with or without a shallow groove. Praeorbital without evident scales. Keel strong on the caudal peduncle. On the tail there may be a sharp median dorsal elevation. Dorsal inserted above fifth anal ray. Dorsal and anal short, their rays not produced, ending at a great distance from base of caudal. Pectoral equal to twice the depth, longer than praeorbital part of head. Ventral midway between base of caudal fin and border of praeopercle.

Colour: verdigris above.

Several specimens, up to 35.5 cm., captured in the Piescaderabay at Curaçao, July, at the „playa” of Bonaire, in Simsons bay lagoon, St. Martin; September, and before the harbour of St. Eustatius, 2—3 miles off shore, where it is taken by hook (August).

Habitat: Its range in the West Indies, imperfectly known; probably identical with *Belone lovii* of Günther, (eye!, interorbital!) which came from the Cape Verde Islands. (Several other species (*acus*) are known to be so widely distributed.) *Belone argalus* C. V. is certainly wrongly cited in the synonymy by Jordan & Evermann.

55. *Belone (Tylosurus) timucu*. Walb.Fig. 10. *Belone timucu* Walb. $\times \frac{4}{5}$.

Esox timucu, Wallbaum, Artedi Pisc. III, p. 88, Brazil.

Belone almeida, Quoy & Gaim., Freycinet, Zool., p. 226.

" *timucu*, Cuvier & Valenciennes, op. cit. XVIII, p. 426.

" *truncata*, Günther, Catalogue Fishes VI, p. 244.

Tylosurus timucu, Jordan & Evermann, Fishes of N. & M. Am. I, p. 711.

Tylosurus almeida, Jordan & Evermann, l. c. I, p. 715.

D. 14; A. (15) 16.

Head $2\frac{7}{8}$ —3. Depth $6+$ in head, $1\frac{1}{2}$ in pectoral. Eye $2\frac{1}{2}$ in post-orbital part of head, equal to interorbital groove, which is shallow, bordered by two ridges, and which has an evident small median crest. Maxillary *not* entirely concealed. Temporal ridge of the quadrangular head very sharp, not notched. 159 scales before dorsal, 124 in lateral line. Dorsal inserted considerably behind anal. Ventrals inserted midway between middle of preoperculum and base of caudal fin. Caudal emarginate. Pectoral longer than post-orbital; caudal peduncle not keeled, quadrangular to rhombic.

Colour: an evident narrow lateral silvery band, widened below dorsal; base of pectoral dusky; no scapular blotch.

Three specimens from Curaçao, in the Schottegat and reefwater, caught by the cast-net, January to August.

Habitat: Ranges from Florida to Brazil; not rare in the West Indies.

N.B. Jordan & Fordice (Proc. U. S. Nat. Mus., Vol. IX, 1886, p. 352) separate off *Tylosurus almeida* Q.G., equal to *Belone timucu* C. V., as a different species without indicating for what reason. This separation is maintained by Jordan & Evermann, l. c. I, p. 715. As they appear to have not seen the types of Quoy-Gaimard, the

validity of this species is very doubtful, and we prefer the synonymy as given above.

56. **Belone (Tylosurus) acus.** Lacep.

Belone latimana, Günther, Catalogue Fishes VI, p. 249, 1866, (D. 25; A. 23).

Belone jonesi, Goode, Amer. Journ. Sc., Arts, 1877, p. 295; Bermudas.

Belone caribbaea, Günther, Catalogue Fishes VI, p. 241, 1866, not of Lesueur, (D. 23—24; A. 21—22).

Tylosurus acus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 716.

D. I, 22; A. I, 20; P. 14.

Head 3. Depth $1\frac{3}{2}$, 16 in total. Breadth $1\frac{1}{2}$ in depth. Eye small, 2^+ in postorbital part, $1\frac{2}{5}$ in interorbital, $8\frac{1}{2}$ in head. Snout $1\frac{3}{4}$ times rest of head, $5\frac{1}{3}$ in total. Postorbital part of head $2\frac{2}{3}$ in snout.

Caudal keel developed as a dermal ridge. A slight dermal fold across praeoperculum. Distance from opercular margin to orbit is contained $1\frac{1}{4}$ in pectoral. Depth $1\frac{3}{4}$ in pectoral. Last rays of dorsal and anal nearly reaching caudal base. Dorsal insertion a little behind anal. Ventrals inserted midway between caudal base and middle of eye.

Colour: no lateral band. A dusky shade on vertical border of praeoperculum. Pectoral black-tipped.

Differs from *Belone caribbaea* Lesueur chiefly in the much longer pectoral, the larger eye (compared with the total length of head), and in colour. The description of Goode of his *Belone jonesi* is the best one; our fish is younger and not so slender as his, viz. 45 cm; (Curaçao); May.

Habitat: West Indies, tropical and subtropical Atlantic.

57. **Belone caribbaea** Lesueur.

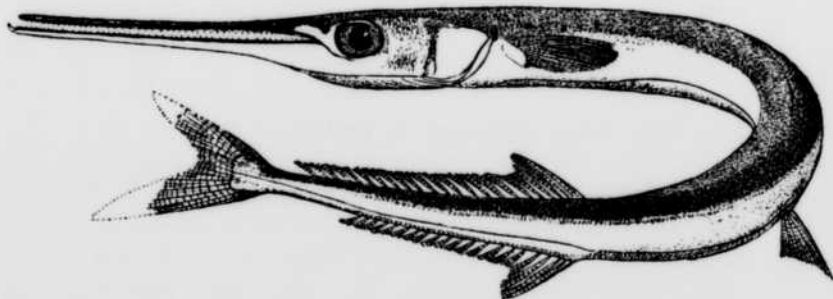


Fig. 11. *Belone caribbaea*. Lesueur. $\times \frac{2}{5}$

Belone caribbaca, Lesueur, Journ. Ac. Nat. Sci., Philad. II, 1821, p. 127; Caribbean Sea.

" " Cuvier & Valenciennes, op. cit. XVIII, p. 430, (1846).

Tylosurus caribbaeus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 717.

D. I. 23; A. 19; P. 15.

Head 3+. Depth $14\frac{3}{5}$, 16 in total (in adults probably less). Breadth $1\frac{3}{5}$ in depth. Eye 10+ in head, $2\frac{1}{5}$ in postorbital part of head. Interorbital 2 in same, $9\frac{1}{2}$ in head. Snout more than twice rest of head; postorbital parts 3 in snout; snout 5 in total. Lower jaw longer than upper by half of pupil's length. Interorbital slightly concave, ridged, the groove being gradually flattened out, passing into an occipital elevation. Praeopercle well scaled; opercle with a scaly margin only, which borders the praeopercle, of $\frac{1}{2}$ a pupil's width. A dermal fold connecting praeopercle with opercle. First dorsal spine over third anal ray. Anterior rays of both fins produced, which renders the latter strongly falcate. Longest ray of dorsal $1\frac{1}{3}$ in postorbital part of head. Anal higher than dorsal posterior rays of both shortest. Ventral small, inserted midway between base of caudal and middle of eye, extending $\frac{1}{3}$ of distance to anal. Last ray $1\frac{2}{3}$ in first, which is twice the length of the last-but-one. Pectoral short, equal to postorbital part of head, equal to depth. Upper ray broadened. Caudal peduncle depressed but not sharp-edged; lateral line passing into a slight dermal ridge.

Colour: green, shading off to white below. A very diffuse lateral band; border of praeopercle with a vertical black streak; caudal fold dusky; pectoral black, its tip lighter.

One specimen caught in the Westpointbay of Curaçao; April. Nomen indig.: *geepie* (L.), (dutch; pron.: gapy).

Habitat: West Indies; not so very common.

N.B. By giving a more detailed description I have tried to prove the specifical validity of this *Belone*.

58. *Belone (Tylosurus) raphidoma* Ranz.

Belone gerania, Cuvier & Valenciennes, op. cit. XVIII, p. 437; Günther, Catalogue Fishes VI, p. 241.

Belone melanochira, Günther, Catalogue Fishes VI, p. 249.

Tylosurus raphidoma, Jordan & Evermann, Fishes of N. & M. Am. I, p. 715; Evermann & Marsh, Fishes of Portorico, p. 99, fig. 17.

D. 20.

Head $3\frac{1}{2}$. Snout $1\frac{2}{7}$ times rest of head. Eye $3\frac{1}{2}$ in snout, 2 in postorbital part of head. Caudal keel weak. Last rays of dorsal easily reaching base of caudal. Ventrals inserted midway between base of caudal and posterior margin of pupil.

One juv. of 6.5 cM. No exact locality given;

Habitat: common from Florida to Brazil.

59. **Belone (Athlennes) hians** C. V.

Belone hians, Cuvier & Valenciennes, op. cit. XVIII, p. 432, 1846; Günther, Catalogue Fishes VI, p. 248.

Athlennes hians, Jordan & Evermann, Fishes of N. & M. Am. I, p. 718.

Easily distinguished from the other Belones by the maxilla, arched strongly upwards. One adult specimen of 85 cM. from Westpointbay, Curaçao.

Nomen indig.: *geep*, (dutch: pron. „gape”).

Habitat: Ranging from Florida to Brazil.

60. **Hemirhamphus unifasciatus** Ranz.

Hemirhamphus unifasciatus, Günther, Catalogue Fishes VI, p. 262.

„ *neglectus*, Bleek., Tijdschr. Dierk. III, p. 157; East Indies.

„ *roberti* (Cuvier & Valenciennes), Günther, Catalogue fishes VI, p. 263.

Hyporhamphus unifasciatus, Jordan en Evermann, Fishes of N. & M. Am. I, p. 720.

„ *roberti*, Evermann & Marsh, Fishes of Portorico, p. 101, fig. 18; Jordan & Evermann, l. c. p. 721.

Depth 8—10 in body; minimum depth in juv. of 9.5—13.5 cM. 12 i. length. The length of the beak is very variable. Measured from tip of upper jaw to tip of lower, it is contained (5^{+} —) $6\frac{1}{3}$ ($—7\frac{1}{4}$) in body. F. i. 2 specimens, captured with the same haul and of the same size, show the proportions $5\frac{2}{7}$ and $6\frac{1}{3}$ respectively.

There does not seem to exist any real difference with *H. roberti* C. V. Lower jaw more or less orange-tipped.

Several specimens from Curaçao (March—July), and from Simonsbay lagoon, St. Martin, Sept.; 18—24 cM. Also juv. and adults from Port of Spain, Trinidad; August.

Nomen indig.: *balao* (*di flambeeuw*) — (flambeeuw = torch).

We have compared them with the East Indian species, which has been described by Bleeker. There seems to be a complete identity, so the range of this *Hemirhamphus* in the tropical seas is a very wide one.

N.B. Jordan & Evermann maintain the two species separate. However, their data for the proportion of the beak, Vol. I, pp. 720 and 721, are not congruent; to have concordance there should be on line 5 under the title: „ $5\frac{1}{4}$ in *H. roberti*”.

61. *Hemirhamphus brasiliensis* L.

Hemirhamphus brouni, Cuvier & Valenciennes, op. cit. XIX, p. 13, 1846; Martinique.

„ *brasiliensis*, Günther, Catalogue Fishes VI, p. 270; Jordan & Evermann, Fishes of N. & M. Am. I, p. 722; Evermann & Marsh, Fishes of Portorico, p. 102, fig. 19.

„ *balao* (Lesueur), Jordan & Evermann, l. c. p. 723.

Scales in L. l. 53—56.

Depth $7\frac{1}{2}$ —8. Beak ($4\frac{1}{4}$) $4\frac{1}{2}$ (5) in body. Pectoral $1\frac{1}{5}$ — $1\frac{2}{5}$. Colour of caudal often dusky; orange tip to snout. Length 24—35 cm.

Eleven specimens examined, from different localities. (Schottegat, reef Curaçao; Simonsbay lagoon St. Martin; south of St. Eustatius). They show a series of gradual transitions between *H. brasiliensis* and *H. balao* Lesueur, so there is no doubt the latter is a nominal species. April—June, Curaçao; Aug.—Sept., Windward Islands.

Nomen indig.: *balao tjiqitu* (at Curaçao); *balahos* (W.) According to Mr. van der Gen the *Hemirhamphi* are also called: *bocalargo*.

Habitat: from Florida to Bahia.

62. *Exocoetus vinciguerrae* Jord. & Meek.



Fig. 12. *Exocoetus vinciguerrae*, Jordan et Meek $\times \frac{1}{2}$.

Exocoetus vinciguerrae, Jordan & Meek, Proc. U. S. Nat. Mus. 1885; Jordan & Evermann, Fishes of N. & M. Am. I, p. 734.

D. 11; A. 11 (12).

Head $4\frac{2}{7}$. Depth 6. L. l. 49; 30 scales before dorsal, 7 between dorsal and lateral line. Eye 3. Snout $3\frac{2}{5}$. Interorbital $2\frac{4}{5}$. Maxillary 3 i. h. Pectoral $1\frac{1}{2}$ — $1\frac{2}{3}$ in body, nearly reaching last dorsal ray. Ventrals inserted a little farther from eye than from last caudal vertebra, their tips not quite reaching end of anal base, $3\frac{2}{5}$ in body. Base of dorsal $1\frac{4}{7}$ in head.

Colour: Pectorals very dark on both sides. Outer rays of ventrals blackish on both sides. Dorsal and caudal distinctly dusky. Fish tinged darkish all over, compared with *E. affinis*.

Two specimens, caught near Curaçao, July—September. Length 24—28 cm. Appears to be only racially different from *E. affinis*, the true southern form.

63. *Exocoetus affinis* Gnthr.

Exocoetus affinis, Günther, Catalogue Fishes VI, p. 288, 1866; Cope, Tr. Am. Philos. Soc. 1871, p. 481; St. Martin.

Exonantes affinis, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2836.

D. 11; A. 12.

Head 4 in length to root of caudal. Depth $5\frac{1}{2}$ ($6\frac{1}{3}$ in total). Eye $3\frac{1}{3}$. Snout $3\frac{1}{2}$. Interorbital slightly concave. Pectoral reaching end of dorsal base. 32—33 scales between occiput and front of dorsal.

Colour: vertical fins pale; ventrals with some dusk; pectorals decidedly dusky with a pale margin, and oblique blotch.

Several specimens caught, August, in the sea near Curaçao. Length up to 24.5 cm.

Nomen indig.: *fleertjie* (pron.: „fleirchie” by the natives).

Habitat: A rather common species in the tropical Atlantic.

64. *Exocoetus bahiensis* Ranz.

Exocoetus bahiensis, Ranzini, Nov. C. Ac. Sci. Inst. Bonon. V, 1842, p. 362; Günther, Catalogue Fishes VI, p. 293, 1866; Jordan & Evermann, Fishes of N. & M. Am. I, p. 739.

D. 14; A. 10; Scales about 54 in L. l.

Head $4\frac{1}{2}$ ($5\frac{1}{2}$ in total). Depth 6 (7). Eye $3\frac{1}{4}$. Snout $3\frac{1}{3}$. Interorbital $2\frac{2}{3}$. Pectoral reaching end of dorsal.

Colour: pectorals rather dark brown, plain, the edges being white. A large blotch on dorsal. Ventrals somewhat dusky at base.

Two specimens of 39 cM. (!) from Curaçao; March—May.

Nomen indig.: *bolado(r)* (i. e. volador!).

Habitat: seems to be the commonest of flying fishes in the West Indies.

65. *Exocoetus gibbifrons* C. V.

Exocoetus gibbifrons, Cuvier & Valenciennes, op. cit. XIX, 1846, p. 118; Jordan & Evermann, Fishes of N. & M. Am. I, p. 741.

D. 13; A. 9.

One specimen of 25 cM. taken in the open sea (22° N. B., 48° W. L.), July. Not belonging to the West Indian collection properly.

66. *Exocoetus mesogaster* Bl.

Exocoetus orbignianus, Cuvier & Valenciennes, op. cit. XIX, 1846, p. 131; Günther, Catalogue Fishes VI, p. 285.

Cypsilurus hillianus, Cope, Tr. Am. Philos. Soc., Philad. 1871, p. 481.

Parexocoetus mesogaster, Jordan & Evermann, Fishes of N. & M. Am. I, p. 728; Evermann & Marsh, Fishes of Portorico, p. 105.

D. 14; A. 14; L. l. 38.

Colour: an inky-black upper margin to dorsal fin.

One juv. of 13 cM., taken in August on the pargobank of Aruba.

Nomen indig.: *popo*.

Habitat: cosmopolitic in the tropical seas.

Flying fishes were sold in the market at Curaçao in thousands, specially in June and October, caught in canoes.

ATHERINIDAE.

67. *Atherina laticeps* Poey.

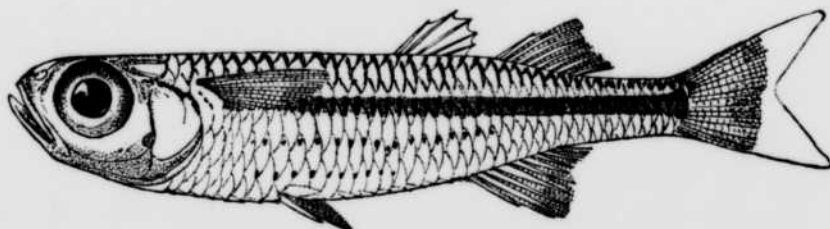


Fig. 13. *Atherina laticeps* Poey. $\times 1.8$.

Atherina laticeps, Poey, *Memorias* II, p. 265. 1861; Havana; Jordan & Evermann, *Fishes of N. & M. Am.* I, p. 790; Evermann & Marsh, *Fishes of Portorico*, p. 111.

D. V, I, 10; A. I, 10; L. l. 36.

Head $3\frac{1}{3}$. Depth $4\frac{4}{5}$ — $4\frac{1}{2}$. Head thick and broad, eye larger than interorbital. Snout $1\frac{1}{2}$ in eye. Maxillary extending beyond front of orbit. Distance from end of snout to root of ventral is $1\frac{3}{4}$ in that from insertion of second dorsal. Insertion of spinous dorsal nearer to anal than insertion of ventrals. Upper edge of orbit raised, not undulated.

Colour: a series of dots above and one beneath silvery lateral band.

Because of the limited number of scales and dorsal rays we prefer to keep the species separate from *A. stipes* Gnthr. Graduations have not been found.

Several specimens of 27—50 mM. Bonaire, July and Curaçao, Sept.

Nomen indig.: *peescatechie* (Curaçao, pap. *pieskeetsjie*).

Habitat: the most common of West Indian silversides.

68. *Atherina araea* Jord. & Gilb.

Atherina araea, Jordan & Gilbert, *Proc. U. S. Nat. Mus.* 1884, p. 27; Jordan & Evermann, *Fishes of N. & M. Am.* I, p. 790; Evermann & Marsh, *Fishes of Portorico*, p. 111, fig. 23.

D. VI, I, 9; A. I, 10—11; Scales in L. l. 40.

Head 4. Depth $5\frac{1}{2}$. Origin of spinous dorsal a little nearer to base of caudal than to snout.

Colour: blue specks on 3 rows of scales.

One specimen captured, April 13th, in the harbour of Curaçao; 6 cM.

Nomen indig.: *pieskeetsjie* (pron.: „peescatechie”).

Habitat: known from the Mexican Gulf; not so far southward.

69. *Atherina harringtonensis* Goode.

Atherina harringtonensis, Goode, *Am. Journ. Sci. & Arts*, 3rd series, XIV, 82, 1877, p. 297; Jordan & Evermann, *Fishes of N. & M. Am.* I, p. 791.

D. VI, I, 10; A. I, 11; Scales: 45 in L. l.

Head 4. Only one juv. of 4.5 cM. harbour of Curaçao March. Described originally from the Bermudas.

70. *Atherina* sp.

A few indeterminable juv. of 14—21 mM.

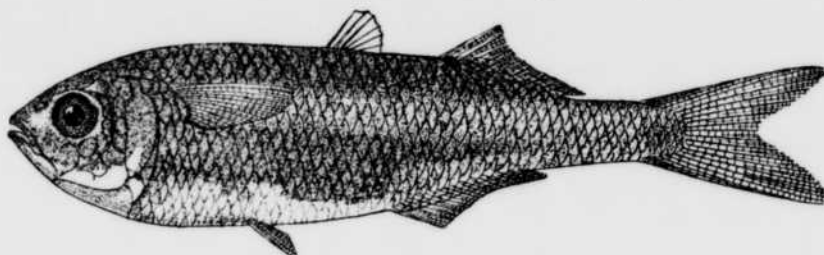
71. *Melanorhinus boekei* nov. gen. et spec.

Fig 14. *Melanorhinus boekei* nov. spec. $\times 1\frac{5}{6}$.

D. VI, I, 16; A. I, 22; L. 1. 44.

Head $4\frac{1}{5}$. Depth $3\frac{1}{3}$. Body very compressed. Greatest depth before the ventrals. Belly keeled. Head short, the lower profile curved more strongly than the upper one. Eye $2\frac{5}{6}$ in head. Snout $3\frac{1}{2}$. Maxillary short and strongly bent, reaching about halfway the snout. Premaxillary freely protractile. Jaws equal. Teeth weak, nearly invisible. Gill-rakers rather slender and extremely closely set. Origin of first dorsal midway between snout-tip and base of caudal. Second dorsal inserted little nearer to base of caudal than to ventral-insertion. Origin of anal midway between caudal base and praeopercular border. Pectorals broad, shorter than head, 5 in length, reaching behind ventral insertion. Ventrals small, reaching scarcely more than halfway the distance to vent. Vertical fins with a conspicuous sheath of scales. Lower lobe of caudal, which is forked, longer.

Colour: olive, belly silvery; an evident black blotch on snout; a dusky shade to top of opercle.

The genus probably allied next to *Thyrina*, Jord. & Culver, the species named after its discoverer, Dr. Boeke.

A dozen specimens of 6 cM. from the oysterpond of St. Martin, Sept.

72. *Mugil curema* C. V.

Mugil curema, Cuvier & Valenciennes, op. cit. XI, 1836, p. 87; West Indies, Brazil.

? *Mugil brasiliensis*, Günther, Catalogue Fishes III, 1861, p. 431 (probably not).

Mugil curema, Jordan & Evermann, Fishes of N. & M. Am. I, p. 813; Evermann & Marsh, Fishes of Portorico, p. 113, fig. 24.

D. IV, I, 8; A. III, 9; L. 1. (36—) 38 (—39) reckoned from pectoral.

Head ($3\frac{1}{2}$ —) 4 ($-4\frac{1}{2}$). Depth ($3\frac{2}{5}$ —) $3\frac{2}{3}$ ($-4\frac{1}{3}$). Interorbital $2\frac{2}{3}$ i.h. in a specimen of 22.5 cM. Caudal emarginate. Distance from tip of pectoral to origin of dorsal equal to $\frac{1}{4}$ of pectoral.

Colour: a dark moustache and a dusky tip to soft dorsal more or less evident.

Apparently differing from *Mugil inclinis* Hancock in the form of the mental space and the greater depth.

It seems to be a very common Mugil about the dutch Antilles. Caught at Curaçao in the reefwater, March; at the „playa” of Aruba, July; near Bonaire; in the Simonsbay lagoon of St. Martin, September, and near St. Eustatius. Also collected at Jacmel, Haiti. Average length $12\frac{1}{2}$ cM., a few specimens of 18—22.5 cM.

Nomen indig.: *aalder* (Curaçao).

Habitat: Ranges from Cape Cod to Brazil; abundant in the West Indies.

73. *Mugil trichodon* Poey.

Mugil trichodon (Poey), Jordan & Evermann, Fishes of N. & M. Am. I., p. 816; Evermann & Marsh, Fishes of Portorico, p. 113.

D. IV, I, 8; A. III (8) 9; L. 1. 35.

Head $3\frac{1}{3}$ — $3\frac{2}{5}$. Depth 3— $3\frac{1}{5}$. Body much compressed and relatively deep; suborbitals with denticles. 19 praedorsal scales in median line. Teeth very evident, though small.

Colour: dusky blotch at base of pectoral. Vertical fins all pale.

Five specimens, up to 68 mM., collected among the reefs near Bonaire minor (July); small samples also from the Windward Islands (Aug.—Sept.).

Habitat: distributed from Florida to Brazil.

74. *Mugil brasiliensis* Agass.

Mugil brasiliensis, Agassiz, Spix. Pisc. Brasil, p. 324, 1829, probably also of Günther, Catalogue Fishes III, p. 431, 1861.

„ „ Jordan & Evermann, Fishes of N. & M. Am. I, p. 811; Evermann & Marsh, Fishes of Portorico, p. 112.

D. IV, I, 8; A. III, 8—9; L. I. 35.

Depth $3\frac{2}{5}$.

Juv. from tide-pools in the reefs of Bonaire minor and the lagoon of Aruba; July—August, with the adipose eyelid not (yet?) fully developed.

Nomen indig.: *aalder*.

The local fishermen pretend that the „aalders”, when adult, reach a length of three feet. (Probably we may just believe half of it). Those large specimens are called „*calmao*”.

Habitat: up to Brazil; common in the West Indies.

Mugils are not much eaten at Curaçao. A few sold in autumn.

75. *Myxus curvidens* C. V.

Myxus curvidens, Cuvier & Valenciennes, op. cit. XI, p. 149, pl. 313; Günther, Catalogue Fishes III, p. 467; Jordan, Proc. U. S. Nat. Mus. XIII, 1890, p. 316, Brazil.

D. IV—I, 8; A. II, 9.

Two specimens, 32 mM. Scaly sheath to vertical fins. Pectoral nearly reaching insertion of dorsal. Pectoral axil dusky. Bonaire, June—July.

Habitat: distributed at the coasts of S. America.

POLYNEMIDAE.

76. *Polynemus virginicus* L.

Polynemus plumierii, Günther, Catalogue Fishes II, p. 321; Cope, Tr. Am. Philos. Soc., 1871, p. 472.

Polydactylus virginicus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 829.

D. VIII, I, 12; A. III, 14—15; L. I. 59.

Head $3-3\frac{1}{3}$. Depth $3\frac{2}{5}-4$. Eye $3\frac{1}{2}$ (juv)—4. Snout $4\frac{1}{2}-5$. Maxillary $2\frac{1}{5}-2\frac{1}{3}$. Interorbital 4. Longest dorsal spine $1\frac{2}{5}$ in head, shorter than longest soft ray. Uppercaudal lobe $\frac{1}{6}-\frac{2}{9}$ longer than head. Pectoral $1\frac{2}{11}$, 7 loose rays.

Colour: back dotted with black; dorsal speckled with black. Caudal speckled and shaded dusky with a pale submarginal border. Anal with large black blotches at anterior border. Pectoral black-tipped.

Two specimens, one from the playa grandi of Wacao, Curaçao, a juv. of 53 mM. (October); one from Jeremie, Haiti, 18 cM.,

(January). In the former place not common enough to be of economic importance.

Habitat: distributed throughout the West Indies, north to Florida.

SPHYRAENIDAE.

77. *Sphyraena picuda* Bl. & Schn.

Esox barracuda, Wallbaum, Artedi Pisc. III, p. 94, 1792.

Sphyraena sphyraena var. *picuda*, Bloch & Schneider, Syst. Ichth. 1801, p. 110.

" *picuda*, Günther, Catalogue Fishes III, p. 336;
Jordan & Evermann, Fishes of N. & M. Am. I,
p. 823.

" *barracuda*, Evermann & Marsh, Fishes of Portorico, p. 115, fig. 26.

Several adolescent specimens, up to 30 cM., collected in the Schottegat and Westpointbay of Curaçao, Jan.—March; in July at the „punta brabo”, Aruba, in August at St. Martin. The juv. being captured at Curaçao in winter only.

The „snouk” (dutch „snoek”, *Esox lucius*), or „*picuda*” is at Curaçao a fish of some commercial importance, some hundreds of them being caught in July—October.

Habitat: from Pensacola and the Bermudas to Brazil.

78. *Sphyraena guachancho* C. V.

Sphyraena guachancho, Cuvier & Valenciennes, op. cit. III, 1829, p. 342; Jordan & Evermann, Fishes of N. & M. Am. I, p. 824.

One specimen from Puerto Cabello, Venezuela, collected by Mr. de Weger; 34 cM.

79. *Sphyraena picudilla* Poey.

Sphyraena picudilla, Jordan & Evermann, Fishes of N. & M. Am. I, p. 824; Evermann & Marsh, Fishes of Portorico, p. 116.

D. V—I, 9; A. I, 9; Scales L. l. 118.

Head 3. Depth $2\frac{1}{2}$ in head, $7\frac{1}{2}$ in body. Eye $5\frac{1}{2}$ i. h. equal to interorbital. Maxillary $2\frac{2}{5}$ i. h., not reaching eye by $\frac{1}{3}$ an eye's width. Interorbital area flattish. Praeocular ridge prominent. Distance from posterior ocular margin to insertion of spinous dorsal equal to

distance from insertion of soft dorsal. Pectoral $3\frac{1}{2}$ i. h. Soft dorsal little in advance of anal.

Colour: olive; a dusky area immediately behind eye. Caudal lively red; of other fins soft dorsal and anal tinged darkest.

Specimens from Curaçao, caught in April in the reefwater, in August in the Schottegat.

Distinguished by the inhabitants from *Sph. picuda* as „ronde snouk” (i. e. round pike). Length up to 49 cM.

Habitat: West Indies, south to Bahia.

STROMATEIDAE.

80. *Peprilus paru* L.

Rhombus longipinnis, Cuvier & Valenciennes, op. cit. IX, 1833; p. 401, pl. 274.

Stromateus gardenii, Günther, Catalogue Fishes II, p. 399.

Rhombus paru, Jordan & Evermann, Fishes of N. & M. Am. I, p. 965.

Peprilus paru, Evermann & Marsh, Fishes of Portorico, p. 141; Regan, Ann. Mag. Nat. Hist. Ser. 7, X, p. 204.

Occaso inally caught at Curaçao; no material collected.

Nomen vulgare: *caracau*.

Habitat: from Cape Cod to Brazil.

BERYCIDAE.

81. *Holocentrus adsensionis* Osbeck var. *rufus* Walbaum.

Holocentrum longipinne, Cuvier & Valenciennes, op. cit. III, 1829, p. 185; Günther, Catalogue Fishes I, p. 28, 1859.

Holocentrus ascensionis rufus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 849; Evermann & Marsh, Fishes of Portorico, p. 118, pl. 3.

D. XI, (14) 15 (16); A. IV, (9) 10; Scales 4—49 (53)—7.

Adults: Head without praeopercular spine $3\frac{2}{9}$, depth 3. Free portion of praeopercular spine 2 in eye. Opercular spine aided by an interior mate of half its length. Interorbital equal to half of head *with* opercular spine. Maxillary reaching scarcely to middle of eye, $2\frac{1}{2}$ i. h. *with* op. sp.; mandib. 2. Eight scales before dorsal. Third dorsal spine equal to interorbital; soft dorsal nearly equal to ventral, $1\frac{1}{6}$ in head *without* operc. spine. Third anal spine

equal to longest anal ray, $1\frac{4}{5}$ — in depth. Pectoral $1\frac{7}{10}$ in head *with* operc. spine. Ventral $1\frac{1}{6}$ in same. Upper caudal lobe equal to head *with* op. sp.

Juvenes: Praeopercular spine 6 in head, which would be about 2 in the eye of corresponding adult (which is somewhat shorter than in other specimens). Dorsal exceeding length of head. Third anal spine $1\frac{3}{5}$ in head. Very conspicuously striped longitudinally along the scales with nine dark interscaly lines, especially on back.

Adults up to 29 cM. from Curaçao, reefwater, Casa corantini (March—July); the lake of Bonaire (July); St. Eustatius (August), 20—50 fathoms; St. Martin, (called here: *red man*), and Haiti. Juv. of 7—11 cM. from the Piescaderabay (Curaçao), and the lake of Bonaire.

Nomen indig.: *kandeeltje* (pron. „candalecha”).

Habitat: common in the West Indies; ranging from Florida to St. Helena.

82. *Holocentrus coruscus* Poey.

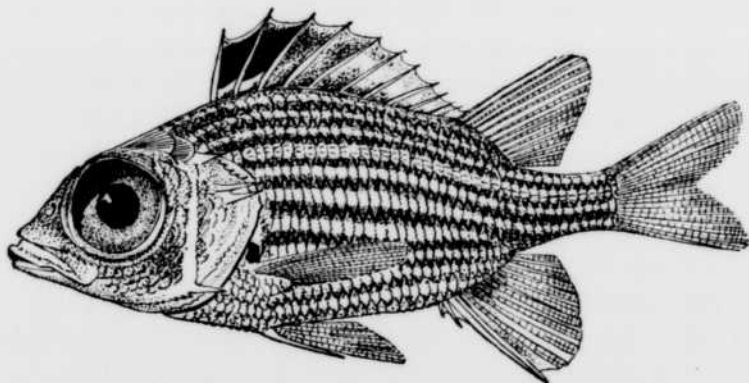


Fig. 15. *Holocentrus coruscus* Poey $\times 2$.

Holocentrum coruscum (Poey), Jordan & Bollman, Pr. U. S. Nat. Mus., 1888, p. 550.

Holocentrus coruscus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 851.

D. XI, $13\frac{1}{2}$ —14; A. IV, 9; L. 1. 41.

Head $3\frac{1}{3}$. Depth 3—. Eye $2\frac{1}{3}$. Snout about 2 in eye. Interorbital $2\frac{2}{3}$. Maxillary small, reaching past anterior border of pupil. Five horizontal rows of scales on cheek, none on opercle. First dorsal spine $2\frac{1}{3}$; third spine 2 i.h. Soft dorsal higher than spinous, not falcate; longest ray 2 i.h. Third anal spine little more than $\frac{1}{2}$ of head. Longest anal ray $1\frac{4}{5}$ i.h. Anal truncate. Upper caudal lobe $1\frac{1}{2}$; pectoral $1\frac{1}{2}$; ventral $1\frac{3}{4}$ i.h.

Colour: a continuous stripe between each two rows of scales („interscaly”); colour of spinous dorsal agrees with that of the description of Jordan & Evermann.

One young specimen of 5 cm. from Curaçao.

83. *Holocentrus vexillarius* Poey.

Holocentrum vexillarium Poey, Memorias, 1860, p. 158; Cuba.

Holocentrus vexillarius, Jordan & Evermann, Fishes of N. & M. Am. I, p. 852; Evermann & Marsh, Fishes of Portorico, p. 119.

D. XI, 13; A. IV, 9; L. 1. 40;

Head 3. Depth $2\frac{3}{4}$. Eye $2\frac{2}{3}$. Maxillary reaching to first third of eye. Third anal spine twice in depth.

Colour: body strikingly *bicolor*; upper half, including the lateral line, almost black, lower half silvery green. Spinous dorsal with one anterior black blotch and dark streaks between the spines.; other fins and snout pale.

One specimen of 4 cm. from the „lake” of Bonaire, July.

N.B. The juvenile stage of the specimen in hand does not allow an absolutely certain determination. It is chiefly based upon the pinnal formula D. XI, 13 and the short maxillary together with the black dorsal markings.

Habitat: Occurring at Cuba and Portorico.

84. *Myripristis jacobus* C. V.

Myripristis jacobus, Cuvier & Valenciennes, op cit. III, 1829, p. 162; Martinique; Günther, Catalogue Fishes I, p. 19, 1859; Jordan & Evermann, Fishes of N. & M. Am. I, p. 846.

D. X—I, 14; A. IV, 13; L. 1. 36.

Head 3—3+. Depth $2\frac{1}{3}$ — $2\frac{1}{2}$ -. Interorbital $4\frac{1}{3}$ — $4\frac{1}{2}$. Maxillary reaching posterior border of pupil. Pectoral $1\frac{1}{2}$ — $1\frac{1}{2}$ i. h., little longer than ventrals. Several specimens from Curaçao (reefwater, Westpointbay: March—April); Saba (20 fathoms), and Haiti.

Nomen indig.: *kandeeltje debajo* (at Curaçao); *buffalohead* (at Saba).

Habitat: West Indies to Brazil.

CYPHOSIDAE.

85. *Cyphosus elegans* Peters.

Pimelepterus elegans, Peters, Berl. Monatsber., 1869, p. 707; Mazatlan.

Kyphosus elegans, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1387.

D. XI, 12; A. III, 11; L. 1. 52; L. tr. 26.

Head 3 ($3\frac{3}{4}$ in total). Depth $2\frac{1}{5}$ ($2\frac{4}{5}$ in total). Eye $2\frac{1}{2}$. Interorbital $2\frac{2}{3}$. Fifteen teeth in upper jaw. Longest dorsal spine $3\frac{1}{2}$ in depth, longer than soft dorsal rays, about equal to anterior anal soft rays. Longest anal ray $2\frac{2}{5}$ i. h.; second anal spine $4\frac{1}{2}$ i. h.

Colour: Dull brownish to leaden. Longitudinal streaks not pronounced, but there are pale round spots of the size of the pupil scattered in lengthwise rows over the body. A dark streak on snout before middle of eye bordered above and below by darker ones. A narrow pale line immediately below eye. Ventrals darker.

Four specimens from „playa grandi”, Wacao, Curaçao, October, 65 mM.

Nomen indig.: *bocachito pientú*.

Habitat: Known as yet only from the Pacific coast of tropical America. Next to the following species one would expect *C. incisor* C. V. to occur at Curaçao. There is, however, not a single specimen to be identified with that species. Dogmatical separationists may call our fish only a specific Atlantical representative form of the well-known Pacific *Cyphosus elegans*, but I cannot find any real motive for separation.

86. *Cyphosus bosci* Lacep.

Pimelepterus bosci, Cuv. Val., op. cit. VII, p. 258, pl. 187; Günther, Catalogue Fishes I, p. 497, and most European authors.

Kyphosus sectatrix, Jordan & Evermann, op. cit. II, p. 1387; Evermann & Marsh, op. cit. p. 211, fig. 63.

Head $3\frac{1}{5}$, ($4\frac{1}{4}$ in total). Depth 2^+ ($2\frac{5}{6}$ in total); 34 teeth in lower jaw. 60 Scales in lateral line, which is continued backwards on caudal fin. (Günther therefore: 66!).

Colour: Ground colour as *C. elegans*. Rests of white circular blotches on back being superseded by the striping. A black border to operculum. Silvery line under eye and a conspicuous semicircular wide band connecting the temporal regions.

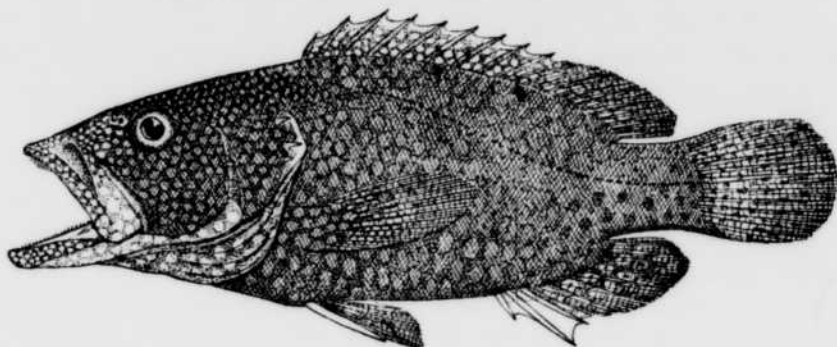
Collected in „Slagbay”, Bonaire and at the Playa, June—July, 2 fine specimens, 20 cM.

Nomen indig.: *bocachito*. („Chito” = small).

Habitat: from cape Cod to West Indies, also common near the West African shores.

SERRANIDAE.

SERRANINAE.

87. *Epinephelus (Petrometopon) coronatus* Cuv. Val.Fig. 16. *Epinephelus coronatus* C. V. $\times \frac{6}{10}$.

Serranus coronatus, Cuv. Val., op. cit. II, 1828, p. 371.

" " var. *nigriculus*, Günther, Catalogue Fishes I, p. 124.

Petrometopon cruentatus coronatus, Jordan & Evermann, op. cit. I, p. 1142.

D. IX, 14; A. III, 8; 94 scales in L. l.; 49 pores.

Caudal rounded.

One beautifully preserved specimen of 18 cM. from Curaçao.

Habitat: Generally common in the West Indies.

88. *Epinephelus (Bodianus) punctatus* L.

Epinephelus punctatus, Boulenger, Catalogue Fishes I, p. 184.

Bodianus fulvus, fulvus ruber & fulvus punctatus, Jordan & Evermann, op. cit. I, p. 1144—1146.

" *punctatus*, Evermann & Marsh, op. cit., p. 150, fig. 43.

D. XI, 15—16; A. III, 9; L. l. 55, 90—96 transverse rows.

Colour: Extremely variable, shading off from black through chocolate, olive-brown to a pale rosy yellow. The lower half of the fish is sometimes abruptly pale. On this ground there are dark points which may have blue centres, only anteriorly or in all of them.

The number of the points varies from about 6 on the head and 3 on the sides to a profuse spotting. The great number of specimens caught enabled us to assure the individual, fluctuating character of all these varieties of markings, often occurring between specimens of the same size out of the same school.

Collected in the sea off the reef of Willemstad, Curaçao; at

the West Point Bay and near Bonaire. March—July. Also caught along the leeward side of St. Eustatius, its harbour at the east side and in the open sea at a depth of 4—160 fathoms, August, 13—24 cM.

Nomen indig.: *purunchi pretu* (pap. poeroentsjie pretoe = black freckles (L.) *(red) butter fish* (W.).

Habitat: From Florida to Bahia.

89. ***Epinephelus (Bodianus) stellatus* Blosser.**

Bodianus stellatus, Blosser, Ann. Carn. Museum VI, 1., 1909, p. 297.

Head $2\frac{3}{5}$. Depth $2\frac{5}{8}$. Scales: 88 transverse rows. Eye $5\frac{3}{4}$. Snout $3\frac{1}{3}$. Third dorsal spine 3 + in head.

Colour: The spots on the head show their pale centres somewhat stellate, although not so sharply as figured by Mr. Blosser. 2 specimens captured in the harbour of Curaçao, 22—24 cM., April.

Nomen indig.: *purunchi cabrito* (pap. poeroentsjie cabrito) Cabrito = goat.

Habitat: Known only from the Guiana coast.

90. ***Epinephelus adscensionis* Osbeck.**

Epinephelus adscensionis, Boulenger, Catalogue fishes I, p. 228; Jordan & Evermann, op. cit. I, p. 1153; Evermann & Marsh, op. cit. p. 152, plate 11.

In the largest specimen the five dusky blotches along the side of the back are still evident, the last, on the caudal peduncle saddle-like.

2 specimens from the Reefs of Willemstad, Curaçao, March, the other from the leeward side of St. Eustatius, August of 14.5 and 33 cM.

Nomen indig.: *gatu* (pap. gatoe) = cat; (L.); *rockhind* (W.).

Habitat: widely distributed through the Atlantic.

91. ***Epinephelus striatus* Bloch.**

Anthias striatus, Bloch, Ichthyologia IX, p. 109, plate 324.

Serranus striatus, Cuv. Val., op. cit. II, p. 288; Günther, Catalogue fishes I, p. 110; Boulenger, Catalogue I, p. 235.

Epinephelus striatus, Jordan & Evermann, op. cit. I, p. 1157; Evermann & Marsh p. 152, plate 12.

D. XI, 16—17; A. III, 8; 110—112 transverse rows of scales.

Colour: Brown dots around the eye absent in one larger specimen. One of the commonest sea-basses at Curaçao, where it was captured in the reefwater, in the harbour, etc. July, August. Also collected at the Windward islands (St. Martin, Simons bay lagoon, September). Length: from 15 to 23.5 cm.

Nomen indig.: *Jacob Peper*, which is a corruption of the dutch „Jacob Evertsen”, a name originally used for an East-Indian species.

Habitat: Very common from Florida to Brazil.

92. *Epinephelus guttatus* L.

Serranus catus, Cuv. Val., op. cit. II, 1828, p. 373.

Epinephelus catus, Boulenger, Catalogue I, p. 210.

„ *maculosus*, Jordan & Evermann, op. cit. I, p. 1158,
III, p. 3196.

„ *guttatus*, Evermann & Marsh, op. cit. p. 153,
plate 13.

D. XI, 15—16; A. III, 8.

Colour: Large specimens have belly-spots lighter, younger ones darker than the ground-colour; Dr. Boeke gives the following life-colour-notes: Vertical bands but little prominent. Inner side of mouth red at both sides of lower jaw only. Points of first dorsal fin tinged lively yellow.

Caught before the Schottegat, Curaçao and in the channel of Aruba, Marsh—July, called: *gatu pretu* = *gatu corra*. Also from the Jerkinsbay of St. Eustatius, August, where it is rather common.

Nomen indig.: Pap: *gatœ pretœ* (L); red hind (W.)

Habitat: West Indies, from Carolina to Brazil.

93. *Epinephelus morio* C. V.

Serranus morio, Cuv. Val., op. cit. II, p. 285.

Epinephelus morio, Jordan & Evermann, op. cit. I, p. 1160; Boulenger, Catalogue fishes I, p. 237; Evermann & Marsh, op. cit. p. 154, plate 14.

One of the most important foodfishes of Aruba is the „meru”; only one specimen caught on the pargobank of Aruba, August, was

preserved, which has been lost. There is not the least doubt however of its belonging to this wellknown species, perhaps the most abundant of West Indian groupers: Large numbers have been caught by the fishermen July—October.

Habitat: Ranges from Virginia to Rio Janeiro.

94. *Epinephelus (Alphestes) afer* Bloch.

Epinephelus afer, Peters, Monatsberichte, Berlin, Ac. 1865, p. 105.

Plectropoma chloropteron, Cuv. Val., op. cit. II, 1828, p. 398.

Epinephelus afer, Boulenger, Catalogue fishes I, p. 254.

Alphestes afer, Jordan & Evermann, op. cit. I, p. 1164; Evermann & Marsh, op. cit. p. 155, fig. 44.

D. XI, $18\frac{1}{2}$, A. III, 9.

Head $2\frac{1}{2}$. Depth $2\frac{3}{4}$. Eye $4\frac{1}{2}$. Interorbital 9—10. Snout 6. Maxillary $2\frac{1}{3}$ — $2\frac{2}{5}$ in head without flap. Gill rakers 12+ 3 rudimentary ones on lower arch. 5th dorsal spine $2\frac{1}{3}$ in head. Second anal spine 3. Pectoral ($1\frac{2}{5}$ —) $1\frac{1}{2}$ (— $1\frac{3}{5}$). Ventrals reaching past vent.

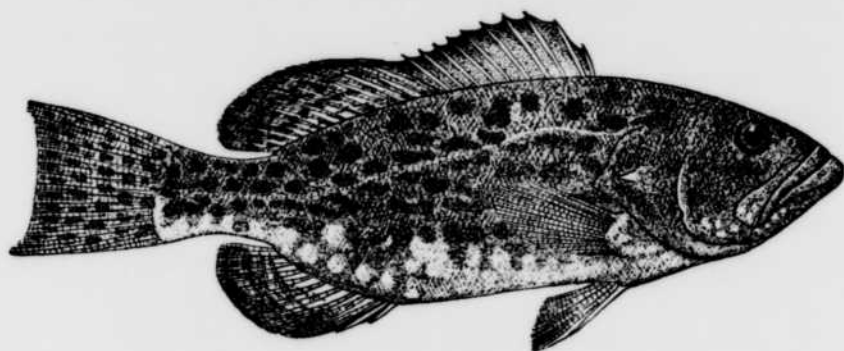
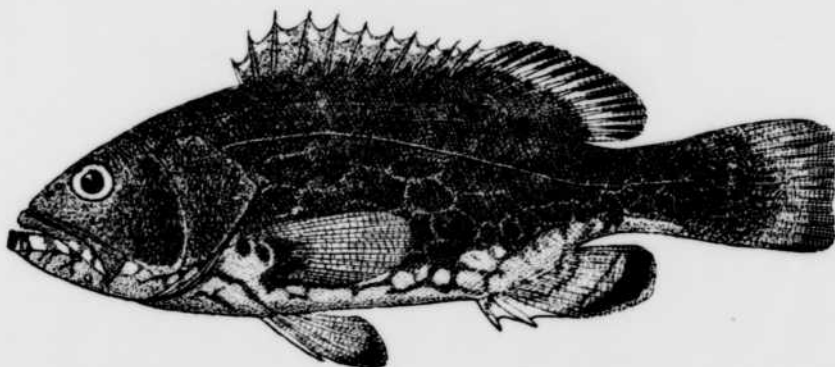
6 specimens, only one from Schottegat (Curaçao), April, of a much darker brown tinge than the others. Captured before the harbour of St. Eustatius, 2—3 miles off shore at a depth of 150—160 fathoms, August, and in the Tumble down Dickbay, young. Also from the Simsonsbay lagoon, St. Martin, September. These specimens have a more sandy yellow tinge. Length not exceeding one foot.

Nomen indig.: *olitu* (pap. olitoe) (L.); „hamlet” (W.) *sjeewu* (L.)

Was sold in small numbers in the market of Bonaire, August, October.

N. B. Jordan & Evermann, page 2854, prefer the name *Alphestes chloropterus*, referring the name *afer* to a West African species of which Bloch may have described the type. I agree however with the views of Boulenger, that Bloch's fish was indeed identical with the *Plectropoma chloropteron* of Cuv. Val. and others, from the West Indies, but that it really came from the American coast of the Atlantic Ocean, as I have not found any specimen belonging to the subgenus *Alphestes* among the rich material of foodfishes from the West African coast, described in the second part of this paper; nor has any other author found so before.

Habitat: Ranges from Cuba to Brazil.

95. *Epinephelus (Mycteroperca) bonaci* Poey.Fig. 17. *Epinephelus bonaci* Poey. $\times \frac{1}{3}$.Fig. 18. *Epinephelus bonaci* Poey. $\times \frac{5}{8}$.

Epinephelus bonaci, Boulenger, Catalogue fishes I, p. 265.

Mycteroperca bonaci, Jordan & Evermann, I, p. 1174; Evermann & Marsh, op. cit. p. 157.

D. XI, 15—16; A. III, 10—11. Scales 122—125.

Head = depth: 3. Eye $4\frac{1}{2}$ — $5\frac{1}{2}$. Interorbital $3\frac{1}{2}$ — $6\frac{1}{2}$. Maxillary 2. Third dorsal spine $2\frac{2}{3}$ —3. Longest anal ray 2—2. Caudal $1\frac{1}{3}$ — $1\frac{2}{5}$. Pectoral $1\frac{1}{2}$ — $1\frac{3}{4}$ in head. Gill rakers 10—12 + rudiments on lower arch.

Colour: a dark moustache.

Common about Curaçao where it was captured in the sea before the harbour of Willemstad in August. Also occurring in the Simons bay lagoon of St. Martin, September. Not exceeding 30 cm. Edible though not very important as a foodfish.

Nomen indig.: *djampao* (L.).

Habitat: From Pensacola to Brazil.

96. **Epinephelus (Mycteroperca) interstitialis** Poey.

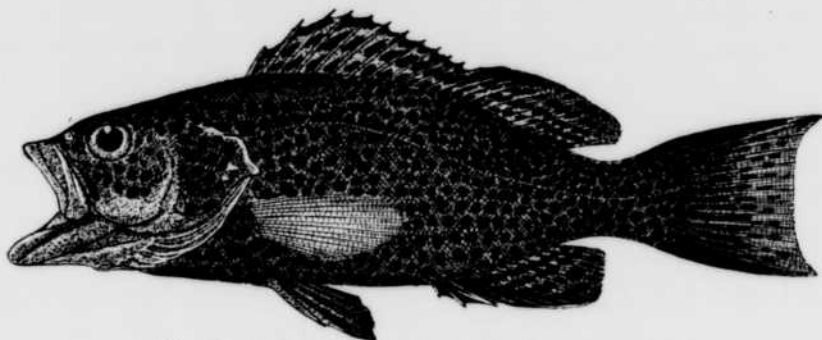


Fig. 19. *Epinephelus interstitialis* Poey. $\times \frac{1}{2}$.

Epinephelus interstitialis, Boulenger, Catalogue Fishes I, p. 266.

Mycteroperca interstitialis, Jordan & Evermann, op. cit. I, p. 1178. One specimen from Guanta (Venezuela, collection De Weger 12, I, 1907, of 21 cm.

97. **Epinephelus (Mycteroperca) ruber** Bloch.

Epinephelus ruber, Boulenger, Catalogue fishes I, p. 267.

Serranus acutirostris, Cuv. Val. II, 1828, p. 286.

Trisotropus undulosus, Cope Trans. Am. Philos. Soc. 1871, p. 465; St. Martin.

Mycteroperca ruber, Jordan & Evermann, op. cit. I, p. 1180.

D. XI, 17; A. III, 11; Scales: 96 vertical rows, 80 pores.

Head $2\frac{6}{7}$ ($3\frac{3}{7}$ — $3\frac{1}{2}$ in total). Depth 3— ($3\frac{2}{3}$ in total), Eye $4\frac{1}{2}$. Interorbital convex. Snout straight Maxillary 2 in head, Number of gill rakers very variable, from 19 tot 35 (!) on lower arch. Fourth dorsal spine 3 in head. Pectoral $1\frac{3}{4}$.

Colour: Ground colour dull brown, a juv. of 6.5 cm. shows the markings with wavy dark parallel lines on the head, effacing gradually on the body (*undulosus* Cuv. Val.). Body and fins ornated all over with white spots, about the size of the pupil and more or less in vertical rows. A distinct back blotch on caudal peduncle. At 18 cm. these markings are still present though not so lively. At 20 cm. they have disappeared. Specimens of a feet long are nearly plain.

Captured off the coast of Venezuela (coll. De Weger) in the Reefwater of Curaçao (June—August) and at Wacao. Up to 33 cm.

Nomen indig.: *granmél*. Seems to be a fish of no economic importance.

Habitat: Atlantic coasts of Africa, central and South-America.

98. ***Paranthias furcifer* C. V.**

Serranus furcifer, Cuvier & Valenciennes, op. cit. II, 1828, p. 264; Brazil.

Paranthias furcifer, Boulenger, Catalogue fishes I, p. 273; Jordan & Evermann, Fishes of N. & M. Am. I, p. 1221.

24 gill-rakers on lower arch.

Colour: three violet spots on side of back, three on lateral line of caudal peduncle.

Three specimens of 15—24 cM. from Bonaire and Curaçao; July—September.

Nomen indig.: *rey di corra* (i. e. king of the lutjans).

Habitat: both coasts of tropical America.

99. ***Serranus (Paralabrax) dewegeri* nov. spec.**

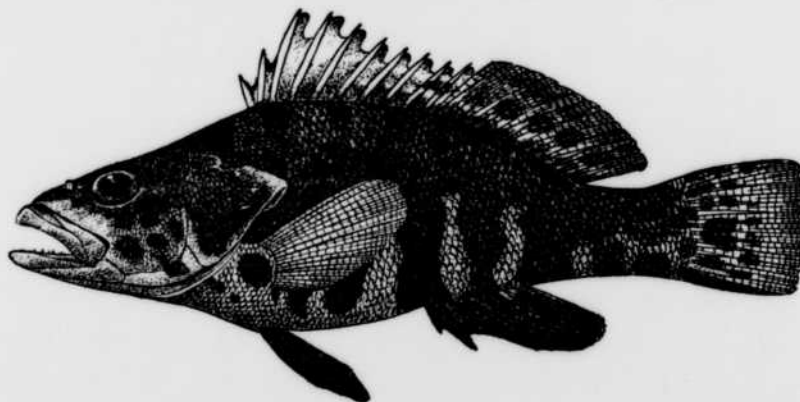


Fig. 20. *Serranus dewegeri* nov. spec. $\times 0.6$.

D. X, $14\frac{1}{2}$. A. III, 7; L. l. 68; R. Br. 7.

Head with flap 3. Depth $3\frac{2}{3}$ — $3\frac{3}{4}$. Eye $5\frac{1}{3}$ in head with flap. Interorbital equalling eye. Snout longer than eye. Maxillary $2\frac{1}{2}$ in head with flap, its width equal to half of eye. Lower jaw projecting.

Scales: nuchal scales beginning just in the vertical of the posterior border of orbit. Thirty scales from occiput to dorsal insertion. Cheeks and opercle scaly, snout naked. Praeopercle finely serrated. Middle opercular spine much larger and extending more backwards than the two other spines. Gill-rakers about 14 on lower

arch. Dorsal originating above base of pectoral. First and second spine short; third and fourth $2\frac{1}{5}$ i. h. (*without flap*), $2\frac{3}{7}$ *with flap*; equalling longest soft rays. Dorsal not deeply notched, the ninth or lowest spine being contained about $1\frac{1}{2}$ in the longest or third. Second anal spine stronger but not as long as the third. Pectoral rounded, little asymmetrical.

Colour: general colour chocolate-brown, the fish having a „tigri-ne” appearance. The dark colour of the upper parts continued in a series of seven broad cross-bars on belly between pectoral and caudal, alternating with pale bands of nearly the same breadth. Back and sides with two rows of darker blotches. Closely-set, ocellated, dark blotches on opercle. Two rows of spots at lower side of head and breast in the direction of the maxillary; a large median blotch and a pair of lateral ones on the mandible. Dorsal fin with rows of large blotches alternating with pale longitudinal lines. Tip of spinous dorsal black; anal dark, the blotches not very clearly marked. Caudal also dusky, the blotches most evident on its base. Pectoral plain, dusky, the base strongly marked with brown and white.

Two specimens of 18 cM. from Guanta, Venezuela where it was discovered by Mr. De Weger, in August—September, 1906.

100. *Serranus (Prionodes) phoebe* Poey.

Centropristis phoebe, Günther, Catalogue Fishes I, p. 85, 1859.

Prionodes phoebe, Jordan and Evermann, Fishes of N. & M. Am. I, p. 1211.

Serranus phoebe, Boulenger, Catalogue Fishes I, p. 290.

Two of these beautiful and easily recognisable fishes were caught at Curaçao and Bonaire, July, and one before the harbour of St. Eustatius. Length 14—21 cM.

Habitat: West Indies, rather common, north to Pensacola.

101. *Serranus (Prionodes) tigrinus* Bl.

Centropristis praestigiator, Günther, Catalogue Fishes I, p. 85.

Serranus tigrinus, Boulenger, Catalogue Fishes I, p. 293.

Prionodes tigrinus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1214.

D. X, 12; A. III, 7; L. 1. 76.

Head $2\frac{5}{6}$. Depth $3\frac{2}{3}$. Eye 4. Eleven gill-rakers on lower arch. Scales on cheek in 12—13 rows. Second anal spine 2 i. h. Pectoral $1\frac{1}{3}$.

Colour: a row of spots along base and hindmargin of anal fin.

Two specimens of 11 cM. found in sponges in the Schottegat, Curaçao, where it seems to occur regularly, according to the Vernacular name: *piesca di spons*; August.

Habitat: Havana, Caribbean Sea; seems to be scarce in the West Indies.

102. *Serranus (Prionodus) tabacarius* C. V.

Centropristis tabacarius, Cuvier & Valenciennes, op. cit. III, 1829, p. 44.

Serranus tabacarius, Boulenger, Catalogue Fishes I, p. 291.

Prionodes tabacarius, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1215.

Colour notes about the living fish of Dr. Boeke:

Blotches on back dark brown, just as the ring before the dorsal fin. Belly orange, about up to lateral line. Pectorals and ventrals orange.

Several specimens of 6.5—14 cM. captured in March—September at Curaçao (Schottegat, Reef Otrabanda; in tidepools). Also from Bonaire and St. Eustatius (September).

Nomen indig.: *piesca di oro* (i. e. golden fish) (L.).

103. *Serranus (Diplectrum) radialis* Q. G.

Serranus radialis, Cuvier & Valenciennes, op. cit. II, 1828, p. 243; Boulenger, Catalogue Fishes I, p. 297.

Diplectrum radialis, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1205.

D. X, 12; A. III, 7; Scales 59—60.

Head 3. Depth $3\frac{1}{2}$ — $3\frac{3}{4}$. Snout $3\frac{2}{3}$. Gill rakers 9 (10) + 3 (2) rudiments on lower arch. Scales on cheek in 8—10 subhorizontal rows; about 16 scales before dorsal insertion. Longest dorsal spine 3—3+ in head; pectoral $1\frac{1}{2}$ i. h.

Colour: a black blotch on opercle and one on caudal peduncle on each side near base of caudal rays in one specimen; cross shades present.

One specimen from Curaçao, June; the others from Cumana, Venezuela, from a considerable depth (65 M.), coll. De Weger, August 1908. Length 13.5–24 cM.

Habitat: distributed at both coasts of tropical America; common in the West Indies.

104. *Serranus (Hypoplectrus) unicolor* Walb.

Holocentrus unicolor, Bloch & Schneider, Syst. Ichth., 1801, p. 322.

Serranus unicolor, Boulenger, Catalogue Fishes I, p. 299.

Hypoplectrus unicolor, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1190.

a. Forma typica.

Colour: agrees with the description of Jordan & Evermann, except that the black spot in the axil of the pectoral is wanting; the upper margin of the pectoral is *not* blue, and the ventral is perfectly pale with a „soupçon” of dusky margin. Black spot in front of eye sometimes exceedingly well marked. Dr. Boeke gives the following life-colour notes: back deep-brown, passing ventrad through white into the yellow of the belly; head coloured much as body, with blue stripes framed by black lines; always a black blotch on dorsal side of caudal peduncle; dorsal in its spinous part of a grayish yellow with blue points, soft dorsal with narrow yellow and bluish-gray stripes; caudal and anal fins yellow; ventrals yellow.

Found at Curaçao at „Casa corantini”, March, and in the pools in the reefs of Bonaire, July.

Nomen indig.: *okvees* (L.) (pron.: ocvase), which may be a corruption of *hog-fish*, which name, however, designs quite another fish.

Half a dozen specimens from the Piescaderabay, Curaçao (July) lacking the blue markings on head, but being identical with the former in all other respects.

Habitat: West Indies.

b. Forma puella C. V.

Ground colour much deeper brown than the forma typica, *not* shading off to paler towards belly. Traces of dark crossbars on body. An oblique blue stripe from anterior border of eye to middle of lower limb of praeopercle. Praeopercle bordered by some large dots. Opercle with four vertical stripes. Vertical fins all orange

with distinct blue markings. Ventrals dark; no dark saddle on caudal peduncle!

Caught at Curaçao, Casa corantini, March, where it is distinguished from the „okvees” as „cacubol”. The same form occurs at St. Martin, Simonsbay lagoon (September).

c. Forma affinis Poey.

Two specimens; colour dark rosy-yellow, no blue markings anywhere, ventrals dusky blue. Captured in the Schottegat of Curaçao in August. Distinguished as „okvees geel” (pron.: ocvase gale, i. e. yellow hogfish).

d. Forma chlorurus C. V.

Only one, very typical specimen. When alive, it was black with a yellow tail and pale pectorals; from Casa corantini, Curaçao, March. Distinguished as „okvees préu” (préu = black).

All these specimens of *Serranus unicolor* were young, no one exceeding 11–12 cm.

105. *Centropristis dispilurus* Gnthr.

Centropristis dispilurus, Günther, Proc. Zool. Soc. Lond., 1867, p. 99.

Dules dispilurus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1219; Evermann & Marsh, Fishes of Portorico, p. 162.

D. X, 12; A. III, 7; L. I. 45 (pores).

One specimen of 37 mm. from St. Eustatius, dredged in September.

Habitat: known from Trinidad, Jamaica, Portorico.

GRAMMISTINAE.

106. *Rhypticus saponaceus* Bl. Schn.

Rhypticus saponaceus, Cuvier & Valenciennes, op cit. III, 1829, p. 63; Günther, Catalogue Fishes I, p. 172; Boulenger, Catalogue Fishes I, p. 348; Jordan & Evermann, Fishes of N. & M. Am. I, p. 1232.

Head $3\frac{1}{2}$. Depth $3\frac{4}{7}$. Maxillary 2. The young have a rudiment of an upper (third) praeopercular spine left.

Colour: young specimens have a more decidedly blue tinge than the older ones, which have more brown in the ground colour.

The juv. have also the white margin of the fins much more pronounced, especially on the caudal.

A dozen specimens from both Leeward and Windward Islands, 6.3 to 26.5 cM. Casa Corantini and the tidal pools in the Willemstad reef (March); the harbour of Curaçao (July), and 2—3 miles before the harbour of St. Eustatius (August).

Nomen indig.: „habon” (L.); *soap-fish* (W.)

Habitat: throughout the tropical Atlantic; from Pensacola to Brazil.

107. *Rhypticus bistrispinus* Mitchell.

Rhypticus maculatus, Günther, Catalogue Fishes I, p. 173.

„ *bistrispinus*, Boulenger, Catalogue Fishes I, p. 350;
Jordan & Evermann, Fishes of N. & M. Am. I, p. 1233; Evermann & Marsh, Fishes of Portorico, p. 163, fig. 46.

One juv. of 19 cM. showing the typical features of the species St. Eustatius, September.

Habitat: South Atlantic States of U. S.; Bahamas.

108. *Rhypticus coriaceus* Cope.

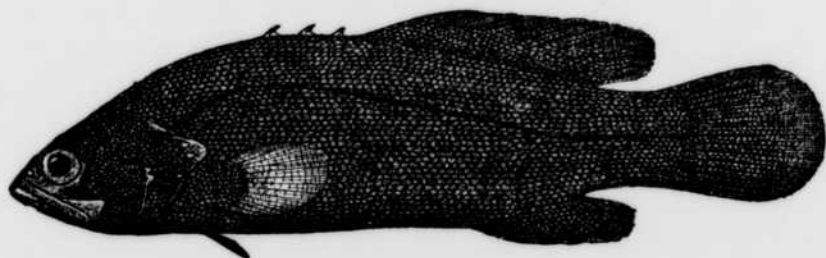


Fig. 21. *Rhypticus coriaceus* Cope. $\times \frac{3}{4}$.

Eleutheractis coriaceus, Cope, Trans. Am. Phil. Soc., 1870, p. 467; St. Martin.

Rhypticus coriaceus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1233; Evermann & Marsh, Fishes of Portorico, p. 163.

D. III?; A?; pores 80.

Head $3\frac{1}{2}$, in total. Depth 4. Eye $4\frac{3}{4}$, equal to snout. Maxillary projecting and reaching behind eye, its width then equalling that of eye. Profile slightly concave above eye. Praeopercle with two flat spines. Three opercular spines, the upper more backward than the lower, which is very small, and nearer to the middle one.

Lateral line well arched anteriorly. Dorsals separate, pectoral rounded. Ventrals 3- i. h. Caudal: while in *Rh. saponaceus* the tail, measured from root of last dorsal ray to tip of caudal fin equals the head (from tip of snout to opercular spine), this distance exceeds here the head with an eye's breadth.

Colour: uniform brown, a dark stripe through eye to snout and lower jaw. No white edges to fins. The characteristic white line from tip of jaws to occiput denotes the species at once.

One specimen of 14.5 cM. from the upper Antilles; no further data, but very probably from St. Martin.

Habitat: known only from St. Martin, Jamaica and Portorico.

109. **Rhypticus spec. juv.**

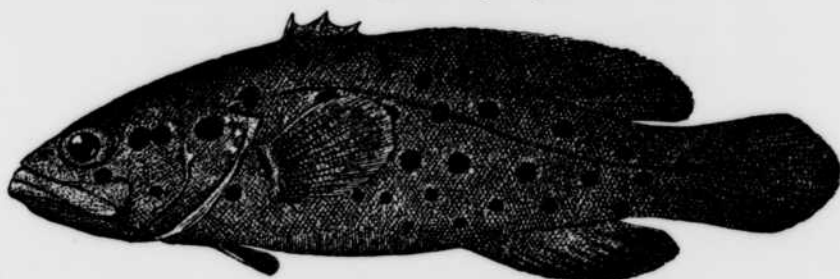


Fig. 22. *Rhypticus spec. juv.* $\times 15/6$.

Two flat opercular spines.

Colour: beautiful; on a plain brownishblack background there are five longitudinal rows of black ocelli, about 10 ocelli in the middle row from eye to caudal fin. Fins with a narrow white edge.

This young (6 cM.) belongs to a species unknown to us, perhaps a new one. Captured in the „lake” of Bonaire, July.

PRIACANTHINAE.

110. **Priacanthus cruentatus** Lacep.

Labrus cruentatus, Cuvier & Valenciennes, op cit. III, 1829, p. 102.

Priacanthus cruentatus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1238; Boulenger, Catalogue Fishes I, p. 352.

Snout $1\frac{1}{3}$ — $1\frac{1}{2}$ in eye. Interorbital $3\frac{3}{4}$ —4 i. h. Last dorsal spine $2\frac{1}{2}$ — $2\frac{2}{3}$ i. h. Third anal spine $1\frac{1}{3}$ in last dorsal spine. Caudal truncate.

Colour: sides with narrow zigzag cross-streaks. Membrane and edge of spinous dorsal, margins of anal and caudal black.

Two specimens, Westpointbay, Curaçao, April, 20—25 cM.

Nomen indig.: *kandeeltje stienkie* (pron. candalecha steenkie).

Habitat: abundant in tropical Atlantic and Pacific.

CENTROPOMINAE.

111. *Centropomus undecimalis* Bl.

Centropomus undecimalis, Cuvier & Valenciennes, op cit. II, 1828, p. 102; Boulenger, Catalogue Fishes I, p. 367; Jordan & Evermann, Fishes of N. & M. Am. I, p. 1118; Evermann & Marsh, Fishes of Portorico, p. 146, fig. 42.

D. VIII, I, 10; A. III, 6; L. I. 68 (pores).

Head *with flap* $2\frac{3}{5}$. Eye $4\frac{3}{4}$. Snout $3\frac{1}{3}$. Maxillary $2\frac{2}{5}$ i. h. Lower jaw strongly projecting. Gill-rakers 9 on lower arch. Prae-orbital smooth, prae-and interopercular edge denticulate. Third dorsal spine $2\frac{1}{4}$ i. h. Second anal spine $1\frac{4}{7}$, longer than third. Pectoral 2 i. h., equal to ventral.

Colour: tips of both dorsal fins dusky, other fins paler.

Two specimens from the freshwater of Curaçao. Length 93 and 110 mM.

Nomen indig.: *bima*.

Habitat: common throughout the West Indies; marine fishes, entering fresh water.

CHILODIPTERINAE.

112. *Apogon maculatus* Poey.

Apogon maculatus, Jordan & Gilbert, Pr. U.S. Nat. Mus., 1882, p. 279; Jordan & Evermann, Fishes of N. & M. Am. I, p. 1109.

Apogon sellicauda, Evermann & Marsh, Fishes of Portorico, p. 143, fig. 40.

D. VI—I, 9; A. II, 8.

Eye $3-3\frac{1}{4}$ i. h.

Colour: The blotch on the caudal peduncle is never sharply defined, four specimens have the tips of the dorsal and anal fin dusky, four have tips pale. The opercular blotch is always very dark. On these

grounds I trust to have proved the nominality of Mrss. Evermann & Marsh's species *A. sellicauda*.

Seven specimens of 6—9 cM. from Curaçao.

Habitat: rather common in the West Indies, ranging from Pensacola to Bahia.

113. *Apogon binotatus* Poey.

Amia binotata Poey, Repertorio, p. 234, 1867; Cuba.

Apogon binotatus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1109.

D. VI, I, 9; A. II, 8.

Colour: brownish-red, the brown prevalent on dorsal, the red on ventral side. A red band on base of soft dorsal and anal; a black crossbar, indistinctly limited, runs between the end of the soft dorsal and the anal; another indistinct brown cross-bar before the base of the caudal fin. Eyes black.

Two specimens, found *in sponges*, at Casa Corantini, Curaçao, March; and from the coast of Venezuela, August, fresh water; 9.5—10 cM.

Nomen indig.: *corra wouco pretu* (i. e. with black eyes).

Habitat: known only from Cuba.

114. *Apogon pigmentarius* Poey.

Monoprion pigmentarius Poey, Memorias II, 1860; p. 123, Cuba.

Apogon pigmentarius, Jordan & Evermann, op. cit., p. 1109.

D. VI, I, 8; A. II, 8.

Head $2\frac{3}{5}$. Eye $3\frac{1}{4}$. Longest dorsal spine $2\frac{2}{5}$ i. head. Scales not ciliated. Like preceding species found in sponges in the Schottegat, Curaçao, August, and in the Reefwater, September. Juv. also found in the Tumble down Dickbay, St. Eustatius. They have the black dots concentrated in a well-defined area on occiput and are with some doubt reckoned to the species. 19—47 mM.

Habitat: Known from Cuba only.

Verhacular name: *Goudvissie* (L.) (= Gold fish).

115. *Apogon stellatus* Cope.

Apogonichthys stellatus Cope, Trans. Am. Phil. Soc. 1866, p. 400, Bahamas; Jordan & Evermann, Fishes of N. & M. Am., p. 1110.

Colour: golden red, dorsal dusky with a white margin. Ventrals dusky. Spots also occurring on the scales of the lateral line, 2 specimens from the harbour of St. Eustatius, August and one with an isopode parasite (*Ironalca* spec.) on the gills from Simson-bay rocks, St. Martin, 6.5 cM.

Habitat: Known only from the Bahamas.

LUTJANINAE.

116. *Lutjanus* (*Neomaenis*) *griseus* L.

Mesoprion griseus, Cuv. Val., op. cit. II, 1828; p. 469.

Neomaenis griseus, Jordan & Evermann, op. cit. II, p. 1255; Evermann & Marsh, Fishes of Portorico, p. 170, pl. 17.

D. X, 14; A. III, 8; L. l. 47—52 (pores); 51 vertical rows.

Head $2\frac{1}{3}$ — $2\frac{2}{3}$. Depth $2\frac{2}{3}$ —3. Body rather deep, reaching its highest point under the middle dorsal spine. Profile straight from snout to beginning of dorsal. Eye $4-4\frac{2}{3}$. Interorbital $5\frac{2}{3}$ — $6\frac{1}{3}$. 8— $8\frac{1}{2}$ gill-rakers on lower arch; no rudiments.

Teeth: 2 larger outer canini in upper jaw, 2 little inner ones.

Vomerine teeth in an anchor-shaped patch, its median prolongation well developed. Lingual patch oblong, simple. Praeoperculum serrate, strongly emarginate, slanting forward. Scales large, horizontal below lateral line, parallel above it anteriorly, wavy posteriorly. 7 Rows of scales on opercle, 1 on subopercle, 1 on interopercle. Several rows of large temporal scales, diminishing apicad. Fourth dorsal spine $2\frac{2}{3}$, 10th spine $3\frac{1}{2}$ in head. Margin of soft dorsal rounded, last ray $1\frac{3}{4}$ in 8th. Caudal lunate, its lobes equal, equal to praeopercle about $1\frac{1}{2}+$ in head. Anal angulate, longest ray more than half of head; first ray reaching tip of last. Pectoral: $1\frac{1}{3}$ — $1\frac{3}{5}$. Ventral $1\frac{3}{4}$.

Colour: upper parts of head brownish, general colour grayish brown; stripes following the rows of scales on back. Vertical fins all dusky; spinous dorsal with a distinct black margin. Anal palest. Pectoral and ventral pale. (N.B. All the proportions in head without flap!)

6 specimens collected: Bonaire and reefwater of Curaçao, 17—18 cM.

Nomen vulgare: *Caranchito* (L.) Near the Windward islands, August—September, in the open sea masses of „gray snappers” were caught. The only specimen conserved belongs to *Lutjanus*

dentatus Guich. But as *Lutjanus griseus* is commonly denoted as „gray snapper” and has been found at St. Croix by Cope (op. cit. ante, p. 470) its occurrence here is very probable.

Habitat: throughout the West Indies, south to Brazil.

117. *Lutjanus (Neomaenis) jocu* Bloch. Schn.

Mesoprion jocu, Cuv. Val. II, 1828, p. 466.

Neomaenis jocu, Jordan & Evermann, op. cit. II, p. 1257; Evermann & Marsh, Fishes Portorico, p. 171, pl. 18.

D. X, 14; A. III, 8.

Head $2\frac{2}{5}$ — $2\frac{1}{2}$. Eye $3\frac{2}{7}$ —4. Snout 3. Interorbital $5\frac{3}{4}$. Maxillary $2\frac{3}{5}$ — $2\frac{2}{3}$. Upper outer canine strong, the inner ones weak; there may be 3 canines at one side. Tenth dorsal spine 3^{+} . Gill rakers 8 on lower arch. In the smaller specimens 3—4 rows of scales running parallel next to lateral line.

Colour: general colour dark olive, suborbital streak still present in the largest specimens; a whitish area may be observable under the eye.

Collected at Curaçao, Bonaire and Haiti; 11— $24\frac{1}{2}$ cM.

Nomen vulgare: „Burstebbers”, a corruption of „bastardbaars” (see following species) (L.) *dogteeth snapper* (W.)

Habitat: West Indies, from Florida to Brazil.

118. *Lutjanus (Neomaenis) apodus* Walb.

Neomaenis apodus, Jordan & Evermann, op. cit. II, p. 1258; Evermann & Marsh, Fishes Portorico, p. 172, pl. 19.

D. X, 14; A. III, 8. L. 1. 43—45 (vertical rows).

Head $2\frac{1}{3}$ — $2\frac{3}{5}$. Depth $2\frac{1}{3}$ — $2\frac{3}{5}$. Eye 4— $4\frac{1}{4}$. Snout $2\frac{3}{4}$ — $3\frac{1}{4}$. Interorbital flat, 6— $6\frac{3}{4}$. Praeorbital 5^{+} —7. Maxillary $2\frac{2}{3}$ — $2\frac{3}{4}$. Upper canines strong, inner weak. Teeth in lower jaw increasing backwards. I Oblong lingual patch, with a backward prolongation. Scales: 6 rows on opercle, the rows above lateral line parallel with it. About 3 rows of large temporal scales. 4th Dorsal spine $2\frac{1}{2}$ — $2\frac{2}{3}$. Middle soft dorsal rays $2\frac{1}{3}$ — $2\frac{2}{3}$. Second anal spine $2\frac{5}{6}$ ($2\frac{1}{2}$ — $3\frac{1}{2}$). First soft anal ray reaching last when depressed. Upper caudal lobe $1\frac{3}{7}$. Middle rays 2. Pectoral $1\frac{2}{5}$ — $1\frac{1}{2}$. reaching vent. Ventral $1\frac{3}{5}$ —2.

Colour: 8 Pale vertical bars, most evident in young. Pectoral axil dark. No black lateral blotch Suborbital streak evident. The living fish has a blue tinge.

Specimens from Curaçao, where it is eaten specially in summer and autumn (reefwater, playa grandi of Wacao, Fuikbay, Schottegat); Bonaire (reefs, quay of Kralendyk, Lac); the pargobank of Aruba; from the Simonsbay-lagoon, and from St. Eustatius. March—October. Also obtained from Tampico. Length not exceeding 26 cm.

Nomen indig.: *bers* (pron.: „bairs”, i. e. baars, the dutch name for the common perch).

Habitat: Common in the West Indies, from Florida to Bahia; more common at the Leeward Islands than about the Windward Islands.

119. *Lutjanus (Neomaenis) buccanella* C. V.

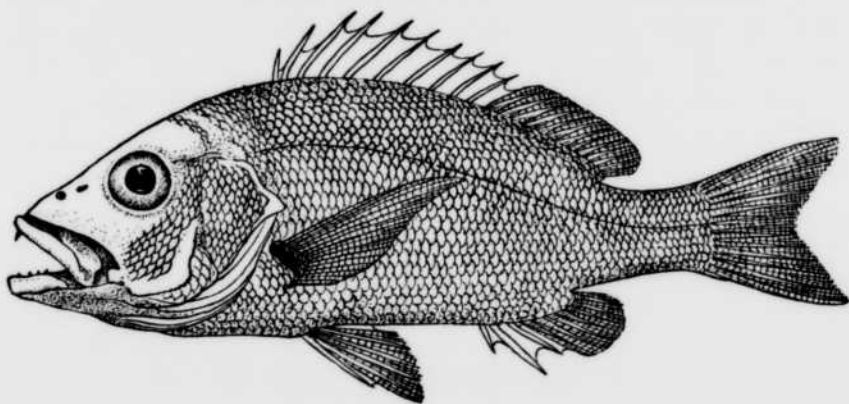


Fig. 23. *Lutjanus buccanella*. $\times \frac{3}{10}$.

Mesoprion buccanella, Cuvier & Valenciennes, op. cit. II, p. 455, 1828; Günther, Catalogue Fishes I, p. 198.

Neomaenis buccanella, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1261.

D. X, 14; A. III, 8.

Head $2\frac{1}{2}$ Depth $2\frac{4}{5}$. Tenth dorsal spine $4\frac{1}{2}$, second anal spine $2\frac{3}{4}$ i. h. Pectoral not quite reaching to base of anal, $1\frac{1}{4}$ i. h.

Colour: red, especially at the dorsal side. Tail yellow; this colour continued as a yellow streak on body. A purple blotch at base of pectoral.

Caught at Curaçao (harbour, Casa-Corantini, reefwater), March—June; and at St. Martin, Simonsbay lagoon, September, where it seems to be rather uncommon. Length up to 28 cm.

Nomen indig.: *blackfish* (W.) Called at Curaçao: *calala di hundu* (hundu = deep), or *colulie*.

Habitat: West Indies, from Elorida to Bahia.

120. *Lutjanus (Neomaenis) aya* Bl.

Bodianus aya, Bloch, Ichthyol., 1790, p. 227.

Neomaenis aya, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1264; Evermann & Marsh, Fishes of Portorico, p. 174, pl. 20.

D. X, 14; A. III, 8; Scales 9—64—17; 48 pores.

Head $2\frac{2}{3}$. Depth $2\frac{3}{4}$. Eye $5\frac{1}{2}$ —6. Snout $2\frac{1}{5}$ — $2\frac{3}{4}$. Interorbital strongly convex, $4\frac{3}{4}$ —5 i. h. Maxillary $2\frac{1}{2}^+$ — $2\frac{4}{5}$, reaching front of pupil or front of orbit. Four canini. $9\frac{1}{2}$ gillrakers on lower arch + rudiments. Scales: $1\frac{1}{2}$ —2 rows on interopercle, $7\frac{1}{2}$ on opercle. Fourth dorsal spine $2\frac{4}{5}$. Tenth $3\frac{3}{4}$ —4. Middle (7th) soft dorsal ray 3 i. h. Upper caudal lobe $1\frac{1}{2}$ — $1\frac{2}{3}$ times the middle rays, which are 2 i. h. Second anal spine $3\frac{4}{7}$ —4 i. h. Pectoral not wholly reaching front of anal. Ventral $1\frac{7}{8}$ i. h.

Both specimens from the pargobank of Aruba, July, 44 cM. It is regularly sold in the market of Aruba. Also recorded from St. Eustatius and Saba.

Nomen indig.: *pargo* (L.).

Habitat: very common on the American coasts of the Atlantic, from Long Island tot Brazil; the well known „red snapper”.

121. *Lutjanus (Neomaenis) vivanus* C. V.

Mesoprion vivanus, Cuvier & Valenciennes, op. cit. II, 1828, p. 454.

Mesoprion aya, Günther, Catalogue Fishes I, p. 198.

Neomaenis vivanus, Jordan & Evermann, Fishes of N. & M. Am. p. 1262; Evermann & Marsh, Fishes of Portorico, p. 175.

D. X, 14; A. III, 8; Scales (6) 8—70 (72)—17 (18); 46 pores.

Head ($2\frac{1}{2}$ —) $2\frac{2}{3}$ (— $2\frac{3}{4}$). Depth ($2\frac{1}{2}$ —) $2\frac{2}{3}$ (—3). Eye 3— $3\frac{2}{3}$ —4+. Snout $2\frac{3}{4}$ —3+. Interorbital $5\frac{1}{3}$ —6, little concave. Praeorbital $5\frac{1}{2}$ —6. Maxillary $2\frac{2}{5}$ — $2\frac{2}{3}$, not quite reaching front of orbit. Gillrakers 12(13) plus rudiments on lower arch. Praeopercle rather slanting forward, finely serrate. Teeth: vomerine patch with an evident median prolongation; 2 lingual patches (exc. 1). Scales: 8— $8\frac{1}{2}$ rows on opercle, $1\frac{1}{2}$ on interopercle, 2 on subopercle. Many rows of scales on nape, bordered posteriorly and anteriorly by larger ones. Fourth dorsal spine ($2\frac{1}{2}$ —) $2\frac{3}{5}$ (— $2\frac{2}{3}$); fifth $2\frac{1}{2}$ — $2\frac{4}{7}$; tenth 3— $3\frac{4}{5}$. Second anal spine ($2\frac{2}{7}$ —) $2\frac{3}{4}$ (—3). Longest rays $2\frac{1}{3}$. Pectoral $1\frac{1}{7}$ — $1\frac{1}{2}$. Ventral $1\frac{1}{2}$ — $1\frac{3}{4}$.

Colour: wellmarked dotlines, following the rows of scales on back in one specimen. An evident golden streak on middle of sides. Lateral black blotch faint.

Captured at Curaçao (reefwater, Schottegat, harbour of Willemstad), March—September; Bonaire; St. Martin (Simonsbaylagoon), and St. Eustatius, leewardside, August. Length: up to 22 cm.

Nomen indig.: *chierkie boca blanca* (Curaçao); *snapper* or *silk* (St. Eustatius).

Habitat: Rather common in the West Indies.

122. *Lutjanus (Neomaenis) analis* C. V.

Mesoprion analis, Cuvier & Valenciennes, op. cit. II, 1828, p. 452.

Neomaenis analis, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1265; Evermann & Marsh, Fishes of Portorico, p. 176, pl. 21.

D. X, 14; A. III, 8; L. l. 69—72 (vertical rows of scales).

Head ($2\frac{1}{2}$ — $2\frac{4}{5}$ —3). Depth ($2\frac{1}{2}$ — $2\frac{4}{5}$ —3). Eye 4 (6). Snout $2\frac{1}{6}$ — $2\frac{3}{5}$. Interorbital $5\frac{2}{5}$ — $6\frac{1}{2}$. Praeorbital 5 (young)— $3\frac{7}{10}$. Maxillary not reaching front of orbit or reaching front of pupil (young), $2\frac{4}{5}$ ($2\frac{2}{5}$). Mandible $2\frac{3}{10}$. Praeopercle with a well-marked abrupt notch. 8—10 gillrakers on lower arch. Teeth: one or two pairs of stronger upper canini, one or two pairs of weaker ones. Vomerine patch simple. Very small, oblong lingual dental patch. Scales: 6—7 rows on cheek, 7—9 on opercle, $1\frac{1}{2}$ on interopercle, $1\frac{1}{2}$ on subopercle. Fourth dorsal spine $2\frac{7}{10}$ — $2\frac{5}{6}$. Tenth spine (3—) $3\frac{2}{3}$ —(4). Ninth dorsal soft ray more than twice the last, $1\frac{1}{2}$ times the first, (2—) $2\frac{2}{9}$ —($2\frac{1}{2}$) i. h. Second anal spine $3\frac{3}{4}$ i. h. First soft anal ray reaching tip of last when depressed. Longest anal ray $2\frac{1}{7}$, twice last one, which is covered for $\frac{2}{3}$ by the first. Middle caudal lobe $1\frac{7}{9}$ — $1\frac{7}{10}$ times the middle rays, which are 2 in head. Pectoral (not) reaching origin of anal, reaching vent, $1\frac{1}{5}$ — $1\frac{2}{7}$. Ventral $1\frac{3}{5}$ — $1\frac{2}{3}$ +

Colour: a distinct black lateral blotch; bluish streaks under and before eye; crossbars sometimes evident.

Captured at Curaçao (harbour, reefwater), March—September, where it is called *carpitan*. One aberrant specimen, caught in April, of 13 cm., has the eye $3\frac{2}{3}$, snout 3+, 9th dorsal ray $2\frac{1}{2}$, 2nd anal spine $3\frac{1}{5}$ and was distinguished by the fishermen as *corra*, it may

be a constant variety. Also from Simonsbay lagoon, St. Martin. The largest measured 41 cM.

The corra is the most important of snappers in the market of Curaçao; probably the large numbers reported to be caught in September also involve the „corra largo” („corra” is a corruption of the dutch word „karper”, i. e. carp).

Habitat: Florida to Brazil; common in the West Indies.

123. *Lutjanus (Neomaenis) synagris* L.

Mesoprion uninotatus, Cuvier & Valenciennes, op. cit. II, 1828, p. 449; Günther, Catalogue Fishes I, p. 202.

Neomaenis synagris, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1270; Evermann & Marsh, Fishes of Portorico, p. 178, pl. 22.

D. X, 12; A. III, 8; L. l. 61—64; L. tr. 6 (7)—17 (18); 50 pores. Head $2\frac{1}{2}$ — $2\frac{2}{3}$. Depth ($2\frac{5}{7}$ —) $2\frac{2}{3}$ (—3). Eye $4\frac{1}{6}$ —5. Snout ($2\frac{1}{2}$) $2\frac{5}{6}$ ($3\frac{2}{3}$). Interorbital 6— $7\frac{1}{2}$, gently convex. Maxillary $2\frac{1}{2}$ — $2\frac{3}{5}$. Teeth: lingual patch single, oblong; may be absent. Vomerine patch anchor-shaped. One pair of very strong, one pair of weak canini in upper jaw. Gillrakers: 6 rudiments + 9—10 on lower arch; 7 on upper. Praeopercle very coarsely serrate below angle, the vertical limb finely serrate. Scales: 6—7 rows on opercle, 2 rows on cheek, 1 row on subopercle, one row on interopercle, $2\frac{1}{2}$ bands on temporal region, bordered posteriorly by flaps, anteriorly by large scales; 52 vertical rows on body. Fourth dorsal spine ($2\frac{1}{3}$ —) $2\frac{3}{4}$ (—3). Tenth $4\frac{1}{5}$; 12th dorsal ray half the 8th, which is 3 i. h. Seventh soft dorsal ray $2\frac{1}{2}$ —3. Caudal emarginate, upper lobe $1\frac{1}{2}$ times the middle rays, being 2 i. h. Second anal spine ($2\frac{2}{3}$ —) 3 (— $3\frac{3}{4}$). First anal ray reaching middle of last when depressed. Pectoral ($1\frac{1}{4}$ —) $1\frac{2}{5}$ (— $1\frac{3}{5}$), reaching past vent. Ventral $1\frac{4}{7}$ —2— in head.

Colour: long streaks formed by dull spots on scales most apparent on back. A few faint longitudinal streaks on head. Sometimes about 5 broad vertical crossbars to be seen on body. Tips of tail and pectoral axil dusky. Lateral blotch present.

Captured at Curaçao (harbour of Willemstad. Schottegat, the young in pools in the reef). March—September, called there *corra largo*; from the reef of Bonaire, also from St. Eustatius (where there occurs in the Tumbledown Dick bay a „pot-snapper” corresponding exactly with plate 22 of Evermann & Marsh) and from

Simsom's lagoon of St. Martin, September. Length 48—260 mm.
Habitat: From Tampa to Brazil.

124. *Lutjanus (Neomaenis) mahogoni* C. V.

Mesoprion mahogoni, Cuvier & Valenciennes, op. cit. II, 1828, p. 447.

Neomaenis mahogoni, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1272; Evermann & Marsh, Fishes of Portorico, p. 179.

D. X, 12; A. III, 8; 50 pores.

Head $2\frac{1}{2}$; depth 3. Eye 4. Maxillary 4 i. h. in the largest specimen. Profile slightly concave from snout to nape. It is rather difficult to distinguish conserved material of this species from *L. synagris* L.; there is likely to be a more striking difference, however, between the living fishes, since the natives call it „*calala*”, approaching it more to *L. buccanella* than to the said species.

Two specimens up to 23.5 cm. from the harbour of Curaçao, March—August. Also recorded as a marketable fish from Bonaire.

Habitat: known from Cuba, Jamaica, Martinique.

125. *Lutjanus (Neomaenis) megalophthalmus* Ev. Marsh.

Neomaenis megalophthalmus, Evermann & Marsh, Fishes of Portorico, p. 177, fig. 48.

D. X, 12; A. III, 8; L. l. 64 vertical rows of scales.

Head equal to depth, $2\frac{2}{3}$. Eye 4. Snout $2\frac{2}{3}$. Maxillary $2\frac{3}{5}$, reaching past front of pupil. A gibbosity in frontal profile, but not so strong as in fig. 48 of Evermann & Marsh. — Teeth: three pairs of canini in upper jaw, the inner ones very short. Vomerine patch with a short, but evident median prolongation. Lingual patch spatulate. Nine gillrakers on lower arch. Caudal peduncle slender, its depth 3 in head. Fifth dorsal spine $2\frac{4}{7}$ i. h. Caudal lobes subequal, $1\frac{2}{5}$ in head. Pectoral $1\frac{3}{5}$ i. h. Ventral $1\frac{5}{6}$.

Colour: grayish on upper parts. Lateral black blotch very evident.

One specimen of 22 cm. from Jacmel, Haiti, August 1906; coll. de Weger.

Habitat: known only from Portorico.

126 *Lutjanus (Ocyurus) chrysurus* Bl.

Mesoprion chrysurus, Cuvier & Valenciennes, op. cit. II, 1828, p. 459; Günther, Catalogue Fishes I, p. 186.

Ocyurus chrysurus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1275.

D. XI, $12\frac{1}{2}$; A. III, 9; P. 14—15; Scales (6) 7—(55) 60—17.

Head $2\frac{5}{7}$ — $3\frac{1}{4}$. Depth $2\frac{3}{4}$ — $3\frac{1}{4}$. Eye 3— $4\frac{4}{5}$. Snout $2\frac{1}{2}$ —3. Interorbital $4\frac{1}{2}$ —5, keeled, Praeorbital 8— $8\frac{1}{2}$, Maxillary $2\frac{7}{10}$, reaching front of orbit. Lower jaw projecting, mouth somewhat oblique.

Teeth: three pairs of weak canini. Vomerine patch anchor-shaped. An oblong lingual patch and a round one. 18—20 gillrakers on lower arch. Praeopercle slanting somewhat forward with scarcely an emargination; finely serrate all over.

Scales: $6\frac{1}{2}$ —7 rows on opercle, 2 on interopercle, 1 on subopercle. Fourth dorsal spine $2\frac{1}{2}$; fifth 3, tenth $3\frac{1}{4}$ i. h. Longest soft ray $2\frac{2}{3}$. Middle caudal rays $2\frac{2}{3}$ in upper rays. Third anal spine $3\frac{2}{3}$ —4. Pectoral $1\frac{1}{4}$, reaching vent. Ventral $1\frac{7}{10}$ in head.

Several specimens from Curaçao (Casa Corantini, reefwater, before the harbour); Bonaire (Lake, playa), and Aruba, paardenbaai. Also recorded from the shallow water off the bay of St. Eustatius. Length up to 31 cm.

Nomen indig.: *grasteltje*, (Curaçao, where it is of some economic importance); *yellow-tail* (St. Eustatius).

Habitat: From Florida to Brazil.

127. *Lutjanus (Rhomboplites) aurorubens* C. V.

Centropristis aurorubens, Cuvier & Valenciennes, op. cit. II, 1829, p. 45.

Mesoprion aurorubens, Günther, Catalogue Fishes I, p. 207.

Rhomboplites aurorubens, Cope, Tr. Am. Philos. Soc. 1871; p. 470, St. Martin; Jordan & Evermann, Fishes of N. & M. Am. II, p. 1277; Evermann & Marsh, Fishes of Portorico, p. 181, fig. 49.

D. XII, 11; A. III, 8.

Head 3— $3\frac{1}{6}$. Depth 3— $3\frac{1}{6}$. Eye $3\frac{2}{5}$ — $3\frac{5}{7}$. Snout $3\frac{1}{5}$ — $3\frac{3}{4}$. Interorbital $3\frac{3}{5}$ —4. Praeorbital $8\frac{1}{4}$. Maxillary $2\frac{3}{5}$ —3. Mandible 2+— $2\frac{1}{3}$. One oblong and one round lingual patch. Vomerine patch with very broad median projection. 21—26 gillrakers on lower arch. Praeopercle: hind margin nearly vertical, slightly emarginate, finely serrate above, coarsely at angle. Anterior nostril the smaller one,

without flap. Scales: $6\frac{1}{2}$ rows on cheek, $8-8\frac{1}{2}$ on opercle, 3 on subopercle, 3 on interopercle. Fourth dorsal spine *not* longest, $2\frac{1}{7}-2\frac{3}{5}$. Twelfth dorsal spine $3\frac{7}{9}-4\frac{2}{5}$. Middle caudal ray $1\frac{3}{4}$ in upper, 2 in head. Second anal spine $4-4\frac{1}{4}$. Third anal ray $3\frac{1}{5}-3\frac{1}{3}$. Pectoral $1\frac{1}{8}-1\frac{2}{9}$, falcate, reaching exactly to tip of ventral when depressed. Ventral $1\frac{1}{2}-1\frac{3}{5}$.

Colour: a green streak along back at base of dorsal; little black at caudal margin.

Captured near Curaçao and at the pargobank of Aruba, up to 30 cM. Also from St. Martin, Simonsbay lagoon, September. Eaten at Bonaire.

Nomen indig.: *sabernatje* (L.), *red round head* (W.).

Habitat: From Charleston to Rio Janeiro.

128. *Lutjanus (Apsilus) dentatus* Guich.

Mesoprion dentatus, Günther, Catalogue Fishes, I, p. 188.

Apsilus dentatus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1278.

D. X, 10; A. III, 8; L. 1. 60.

Head 3. Depth $2\frac{5}{7}$. Eye $4\frac{1}{2}$. Snout 3. Interorbital keeled, 4-. Praeorbital $7\frac{1}{2}$. Maxillary $2\frac{1}{2}$ i. h. Teeth: 3 distinct canini in upper jaw, 5 in lower, all of them rather small. Vomerine patch with a small median prolongation. Seventeen gillrakers on lower arch. Scales: 9 rows on opercle, 7 on cheek, 4 on interopercle, 2 on subopercle. Fourth dorsal spine $2\frac{1}{3}$. Tenth $3\frac{2}{9}$. Fifth dorsal ray $2\frac{2}{7}$. Middle caudal ray 2 i. h., 2 in upper lobe. Last anal ray somewhat produced, $2\frac{3}{5}$. Third anal spine $3\frac{1}{2}$. Pectoral equal to head. Ventral $1\frac{2}{5}$ -.

One specimen from St. Eustatius, before the harbour, of 30 cM.

Nomen indig.: *gray snapper*, name probably in common with *Lutjanus griseus*.

Habitat: West Indies.

129. *Aprion macrophthalmus* Mull. & Trosch.

Centropristis macrophthalmus, Müller & Trosch, in Schomburgk, Hist. Barbados 1848, p. 666.

Aprion macrophthalmus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 1280.

Eye 3-. Snout $3\frac{1}{2}$. Maxillary $1\frac{3}{7}$, reaching front of pupil. Temporal region with three rows of large scales. Last rays of dorsal and anal not greatly elongate. Third anal spine $3\frac{1}{2}$. Pectoral $1\frac{1}{6}$.

One specimen from Surinam, 19 cm.

Habitat: West Indies.

PSEUDOCHROMIDAE.

130. *Malacanthus plumieri* Bl.

Malacanthus plumieri, Cuvier & Valenciennes, op. cit. XIII, 1839, p. 319, 380; Jordan & Evermann, Fishes of N. & M. Am. III, p. 2275.

D. VI, 54—55; A. 53—54.

Eye $5\frac{3}{4}$ —6 in head with spine. This is certainly the most current formula for West Indian specimens, not D. VI, 49; A. 48, as given by Jordan & Evermann.

Captured at Curaçao in Fuikbay and reefwater, at Bonaire, and at the siera colorado of Aruba. Also at the Windward Islands (St. Eustatius, shallow water off the bay; at greater depths, on Saba bank, 15 fathoms); Length up to 54 cm.

Nomen indig.: *piescarai colo di chieniesjie* (L.); *whiting* (W.).

Habitat: throughout the West Indies.

131. *Caulolatilus chrysops* C. V.

Latilus chrysops, Cuvier & Valenciennes, op. cit. IX, p. 496.

Caulolatilus microps, Goode & Bean, Pr. U. S. Nat. Mus., 1878, p. 43; Jordan & Evermann, Fishes of N. & M. Am. III, p. 2277.

D. VIII, 24; A. I, 23; 114 transverse rows of scales under lateral line.

Head $4\frac{2}{7}$ in total, depth $3\frac{3}{4}$ ($4\frac{1}{2}$ in total). Eye $3\frac{4}{5}$. Snout $2\frac{1}{2}$. Maxillary $2\frac{2}{3}$. Last dorsal spine 3. Upper caudal lobe $1\frac{1}{3}$. Longest anal rays $2\frac{1}{2}$. Pectoral $1\frac{1}{12}$. Ventral $1\frac{2}{3}$ in head.

Colour: a triangular black spot above axil; a yellow band below eye.

This species is probably not identical with *C. cyanops* Poey.

One specimen from the pargobank of Aruba, August.

Nomen indig.: *udiewu* (L.).

Habitat: from Mexican Gulf to Brazil.

SCIAENIDAE.

132. *Micropogon furnieri* Desm.

Micropogon argenteus, Cuvier & Valenciennes, op. cit. V, p. 218, 1830.

Sciaena opercularis, Quoy. Gaim. Voy. Uran. Zool. p. 347.

Micropogon undulatus, Günther, Catalogue Fishes II, p. 271 (partim).

Micropogon furnieri, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1462.

D. X, 26—28; A. II, 8; L. 1. 51.

Head 3. Depth $3\frac{1}{3}$ — $3\frac{1}{2}$. Eye 5— $5\frac{1}{2}$. Profile flat above eye. Maxillary 3. Praeopercle rather coarsely serrate with 11 teeth on posterior edge and angle. Outer teeth in jaw evidently enlarged. Gillrakers 13—15 on lower arch. Scales 8 in a straight series from front of dorsal to lateral line, 10 in an oblique one. Third dorsal spine $1\frac{5}{6}$ — $2\frac{1}{5}$ i.h. (without flap). Spinous dorsal without scaly sheath; soft dorsal with a low sheath, second anal spine 4 i.h. (without flap). Pectoral 4 in length, reaching past ventral. Ventral 5, filamentous.

Colour: short vertical bars superiorly on back, continued inferiorly as oblique stripes, all extremely sharply defined.

Three specimens, one from the reefwater of Curaçao, (June), and called *ronco*, the others from Carupana, Venezuela; 23.5—37 cm.

Habitat: West Indies. *M. undulatus* L. seems to be a corresponding northern species.

133. *Umbrina coroides* C. V.

Umbrina coroides, Cuvier & Valenciennes, op. cit. V, 1830, p. 187.

" *broussonetti*, Günther, Catalogue Fishes II, 1860, p. 277.

" *coroides*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1466.

D. X, I, 26—28; A. II, 6($\frac{1}{2}$). L. 1. 49.

Head $3\frac{1}{2}$ — $3\frac{3}{5}$. Depth 3— $3\frac{1}{2}$. Eye $3\frac{1}{2}$ — $3\frac{3}{4}$. Interorbital $3\frac{1}{2}$. Second dorsal spine $1\frac{4}{5}$. Third spine $1\frac{3}{4}$. Second anal spine $2\frac{1}{3}$ — $2\frac{1}{2}$. Pectoral $1\frac{1}{2}$ — $1\frac{3}{5}$ i. h.

Two specimens from St. Eustatius (Tumbledown Dick bay). August, 4—10 fathoms, called there *sand-eater*. Also from Punta Brabo, Aruba, where it is called *colbino*, the name *piesca di plata* (i. e. silvery fish), apparently being an occasional name. Length 13.5—17 cM.

Habitat: from Florida to Brazil.

134. *Umbrina gracilicirrhus* nov. spec.

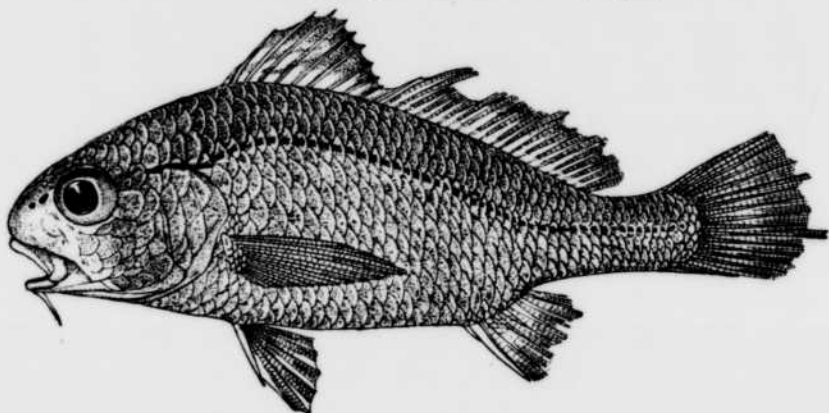


Fig. 24. *Umbrina gracilicirrhus* Nov. spec. $\times 7/8$.

D. X, I, 22; A. II, 7; L. 1. 48.

Head $3\frac{1}{4}$. Depth 3. Eye $3\frac{1}{3}$. Snout $3\frac{1}{3}$, not strongly projecting. Front profile regular, nearly flat from eye to front of dorsal, where it reaches its highest point in a gentle curve. Mouth little oblique, maxillary reaching posterior border of pupil, $2\frac{1}{3}$. — Teeth villiform, the outer row in the upper jaw evidently enlarged. Praeopercle with the membrane crenulate. Gillrakers: 15 on lower arch, minute, but not tubercular. Barbel 2 in eye, slender and pointed. First dorsal beginning somewhat behind base of pectoral, the third spine being the highest, 2. i. h. Soft dorsal mutilated. Second anal spine strong, $2\frac{2}{9}$ i. h. The soft anal broken. Pectoral $1\frac{1}{7}$ i. h. Ventrals mutilated.

Colour: no markings on the silvery body; gill-cavity black.

One specimen of 113 mM. to base of caudal from the coast of Venezuela, coll. De Weger.

N.B. As this species is intermediate between the so-called genera *Umbrina* and *Menticirrhus*, it is preferable to fuse them again into one, e. g. the old genus *Umbrina*.

135. *Eques acuminatus* Bl. Schn.

Eques lineatus, Cuvier & Valenciennes, op. cit. V, 1830, p. 169.

" *acuminatus*, Günther, Catalogue Fishes II, p. 280;
Jordan & Evermann, Fishes of N. & M., Am. II, p. 1487.

D. X, I, 36—40; A. II, 7.

Pectoral $1\frac{1}{3}$ — $1\frac{1}{4}$ in head (without flap).

Colour brown, first dorsal and ventrals largely black.

Three specimens, 13.5—16 cM., from the Schottegat of Curaçao, August, and from Simonsbay lagoon, St. Martin, September.

Nomen indig.: *rey di piesjie porco* (i. e. king of the Monacanthidae).

Habitat: from South Carolina to Brazil.

136. *Eques punctatus* Bl. Sohn.

Eques punctatus, Cuvier & Valenciennes, op. cit. V, pl. 167, p. 116, 1830, Günther, Catalogue Fishes II, p. 281; Jordan & Evermann, Fishes of N. & M. Am. II, p. 1488.

D. IX. I, 49; A. II, 7.

One specimen of 18 cM. from the coast of Venezuela, coll. de Weger.

Habitat: throughout the West Indies.

137. *Eques lanceolatus* L.

Eques balteatus, Cuvier & Valenciennes, op. cit., V. p. 165, 1830.

Eques lanceolatus, Günther, Catalogue Fishes, II, p. 279;
Jordan & Evermann, Fishes of N. & M. Am., II, p. 1489.

D. XIII—XIV, I, 50—53; A. II, 5.

Head $3\frac{2}{3}$ —4. Depth $2\frac{2}{3}$ —3. Eye $3\frac{1}{2}$ —4. Snout $3\frac{1}{2}$ —4.

Life colour: The longitudinal bands dark brown, margined with grayish blue. Upper parts lightbrown, ventral parts more grayish-brown.

Several specimens from Curaçao (harbour), March—July, and from Simonsbay lagoon (St. Martin), September.

Nomen indig.: *rey di ladrondchie* (i. e. king of the Pomacentrus).

138. *Eucinostomus pseudogula* Poey.

Gerres jonesi, Günther, Am. Mag. Nat. Hist., III, 1879, pp. 150, 389.

Eucinostomus pseudogula, Jordan & Evermann, Fishes of N. & M. Am., II, p. 1368; Evermann & Marsh, Fishes of Portorico, p. 205.

D. IX, 10; A. III, 7; L. 1. 48.

Depth $3-3\frac{1}{5}$. Eye 3. First dorsal spine $2\frac{1}{5}$. Second anal spine $3\frac{1}{3}$. Pectoral $3\frac{2}{5}-3\frac{1}{2}$ in body. Ventral 2 i. h.

Colour: Tip of spinous dorsal black.

Collected at Curaçao (Casa Corantini, harbour, Wacao, Schottegat) and Bonaire minor (reefs), March—July. Also a single specimen from St. Eustatius. Length up to 12.5 cm.

Nomen indig.: *schobbejak*.

Habitat: from Cuba and Bermudas to Brazil.

139. *Eucinostomus harengulus* Goode & Bean.

Eucinostomus harengulus, Goode & Bean, Pr. U.S. Nat. Mus., 1879, p. 132; Jordan & Evermann, l. c., II, p. 1368; Evermann & Marsh, Fishes of Portorico, p. 206.

D. IX, 10; A. III, 8; L. 1. 45.

Head $3-3\frac{1}{3}$. Depth $2\frac{1}{2}-2\frac{2}{3}$. Eye $2\frac{5}{6}$. First dorsal spine $1\frac{6}{7}$ i. h. Second anal spine $2\frac{3}{4}$ i. h. Pectoral 4. Ventral $1\frac{2}{3}$.

Colour: black tip to spinous dorsal.

Two specimens from Schottegat, Curaçao, October, up to 17 cm.

Nomen indig.: *warda costa*.

Habitat: West Indies, from Florida to Bahia.

140. *Ulaema lefroyi* Goode.

Diapterus lefroyi, Goode, Am. Journ. Sci. Arts., 1874, p. 123, Bermudas.

Ulaema lefroyi, Jordan & Evermann, l. c., II, p. 1371; Evermann & Marsh, Fishes of Portorico, p. 207.

D. IX, 10; A. II, 8; L. 1. 47.

Head $3\frac{1}{2}$. Depth $3\frac{1}{3}$. Eye $2\frac{3}{4}$. Snout $3\frac{1}{5}$. Interorbital $3\frac{1}{4}$. Maxillary $2\frac{3}{4}$ i. h., reaching orbit; exposed part 5. Praemaxillary-groove naked. Depth caudal peduncle 3. Gillrakers. 7. Second dorsal spine $1\frac{4}{5}$. Second anal spine $3\frac{1}{3}$ in head.

Captured in June in the harbour of Curaçao, together with *Eucinostomus pseudogula*, and equally called *schobbejak*. Also at St. Eustatius, August, where it is called *silverfish*. Length up to 12.5 cm.

Habitat: West Indies.

141. *Gerres (Xystaema) cinereus* Walb.

Gerres squamipinnis, Günther, Catalogue Fishes I, p. 349.

Xystaema cinereum, Jordan & Evermann, Fishes of N. & M.

Am. II, p. 1372; Evermann & Marsh, Fishes of Portorico, p. 207, fig. 61.

" *havana*, Nichols, Bull. Am. Mus. Nat. Hist. XXI, 1912, p. 189.

D. IX, 10; A. III, 7; L. I, 40—43.

Head $3-3\frac{1}{4}$. Depth $2\frac{1}{3}-2\frac{3}{5}$. Eye ($2\frac{1}{4}$ —) $2\frac{2}{3}$ ($-3\frac{1}{4}$). Maxillary ($2\frac{3}{7}$ —) 3 ($-3\frac{3}{4}$) i. h. Exposed part in the largest specimen 5 i. h. Praeopercle entire. Second anal spine $2^{+}-2\frac{2}{3}$. Pectoral 3 in the length to furcation of tail. Ventrals reaching $\frac{3}{4}$ the distance to vent.

Colour: The dark crossbars are more evident in the larger specimens.

A large quantity collected at Curaçao (reefwater, Casa Corantini, Cornelisbay). The most common name is here *cabricutchie*, young specimens being called *raansla*, but sometimes also *schobbejak* and *warda costa*, apparently confusions with the genus *Eucinostomus*; a marketable fish of some importance. Also found at St. Eustatius, Simonsbay lagoon (St. Martin), at Haiti (Aux Cayes, and in the Caracasbay) March—September. Length 62—280 mm.

Habitat: West Indies, north to Florida.

N.B. The validity of *Xystaema havana* Nichols is doubtful, the only difference of possible specific value being the smaller maxillary. A specimen of our collection which is of equal size as the type of *X. havana* has: eye 3, maxillary $2\frac{1}{2}$, depth $2\frac{4}{11}$ (Nichols: 2.9; 3.4; 2.7). The maxillary may have been measured in an other way.

142. *Gerres rhombeus* C. V.

Gerres rhombeus, Cuvier & Valenciennes, op. cit. VI, 1830, p. 459; Jordan & Evermann, Fishes of N. & M. Am. II, p. 1374; Evermann & Marsh, Fishes of Portorico, p. 208.

D. IX, 10; A. II, 9; L. I, 38.

Head $3\frac{1}{4}$. Depth $2\frac{1}{6}$. Eye 3. Interorbital 3.

In the eldest specimen the praeopercular serrations are obsolete. Second dorsal spine $3\frac{1}{2}$. Second anal spine $1\frac{1}{2}$ -. Pectoral $2\frac{1}{2}$. Ventral $3\frac{2}{3}$.

Captured near Curaçao (reefwater, Schottegat), June—August, and St. Martin, August. Length up to 17 cM.

Nomen indig.: *carpeeuw* (L.).

Habitat: common in the West Indies, south to Bahia.

N.B. *Gerres olisthostomus* and *plumieri*, so common in the archipelago, were not found at Curaçao.

143. *Gerres brasiliannus* C. V.

Gerres brasiliannus, Cuvier & Valenciennes, op. cit. VI, p. 458, 1830; Jordan & Evermann, Fishes of N. & M. Am. II, p. 1378; Evermann & Marsh, Fishes of Portorico, p. 209.

D. IX, 10; A. III, 8; L. l. 38.

Head $3\frac{1}{6}$. Depth $2\frac{1}{7}$. Eye $3+$. Snout $3\frac{2}{5}$. Maxillary $2\frac{1}{2}$, reaching vertical of pupil; its exposed portion $3\frac{2}{3}$ in head. Praemaxillary-groove naked. Minimum-depth of caudal peduncle $2\frac{4}{7}$ i.h. Eleven gillrakers on lower arch. Second dorsal spine $1\frac{2}{5}$. Second anal spine $1\frac{4}{5}$. Pectoral 1 i.h., 3 in length.

One specimen of 28 cM. from the Schottegat, Curaçao.

Nomen indig.: *carpeeuw*.

Habitat: common in the West Indies, from Cuba to Bahia.

PRISTIPOMATIDAE.

144. *Haemulon album* C. V.

Haemulon album, Cuvier & Valenciennes, op. cit. V, 1830; p. 241.

„ *microphthalmum*, Günther, Catalogue Fishes I, p. 306.

„ *album*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1295; Evermann & Marsh, Fishes of Portorico, p. 185, pl. 24.

D, XII, 16; A, III, 8; L. l. 51.

Eye $4\frac{2}{5}$. Snout $2\frac{3}{4}$. Maxillary $2\frac{2}{5}$. Interorbital $4+$. Profile with occipital depression, no sharp gibbosity at nape. Praeopercular denticles coarser below. Scales above lateral line in very oblique rows anteriorly, thence becoming parallel with same; those below L. l. still oblique; 9 scales in a vertical row from beginning of dorsal to lat. line. Two small gill-rakers below angle. Fourth dorsal spine $2+$ i. h.;

spines graduated, the 7th low. Longest soft ray of dorsal $3\frac{2}{3}$. Second anal spine $2\frac{2}{5}$, reaching beyond the third. Longest anal soft ray 3, the first ray not reaching the tip of last one. Upper caudal lobe longest, $1\frac{1}{3}$ in head. Pectoral $1\frac{3}{5}$. Ventral $1\frac{2}{3}$.

Colour: Edge and base of all the higher scales dark; snout and edge of praeopercle dark-brown. Dorsal and caudal nearly black; ventrals dusky, pectoral and anal with slight shades.

One specimen from Simonsbay lagoon, St Martin; 14.5 cm. September.

Nomen indig.: *Margaret fish* (W.).

Habitat: from Florida to Brazil.

145. *Haemulon bonariense* C. V.

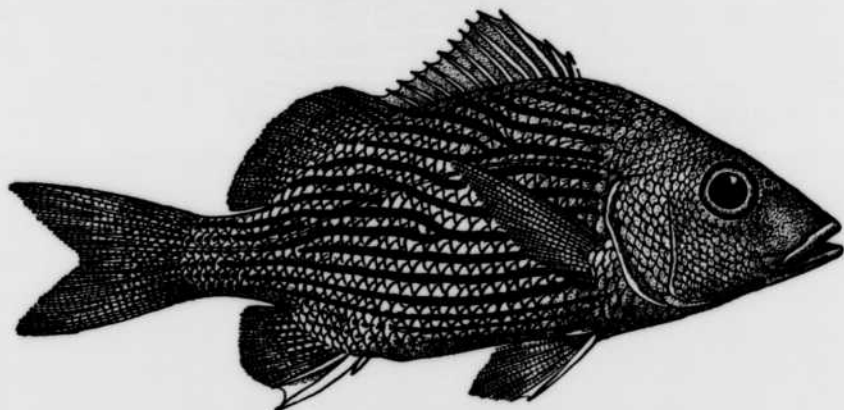


Fig. 25 *Haemulon bonariense* C. V. $\times \frac{6}{15}$.

Haemulon bonariense, Cuvier & Valenciennes, op. cit. V, 1830; p. 254.

" *canna*, Günther, Catalogue Fishes I, p. 311.

" *bonariense*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1297.

D. XII, 16; A. III, 8.

Head $2\frac{2}{3}$ — $2\frac{5}{6}$. Depth. $2\frac{2}{3}$. Eye $3\frac{2}{5}$ — $3\frac{1}{2}$. Snout $2\frac{3}{4}$. Interorbital 5. Maxillary $2\frac{2}{3}$. Anterior profile little concave before eyes. Fourth dorsal spine $2\frac{5}{6}$. Longest soft ray 3. Second anal ray 2. Pectoral $1\frac{2}{3}$. Ventral $1\frac{2}{3}$.

Colour: 11—12 undulating stripes; the young show the general pattern of the genus, viz. longitudinal dark stripes and a blotch on caudal peduncle.

Several specimens from Schottegat and the harbour of Curaçao, March-June and one from Venezuela, collection De Weger. Length up to 19 cm.

Nomen indig.: *coorcoor pretu* (pretu = black).

Habitat: West Indies, south to Buenos Ayres.

146. *Haemulon parra* Desm.

Haemulon caudimacula, Cuvier & Valenciennes, cp. cit. V, p. 226, 1830; Günther, Catalogue Fishes I, p. 313.

" *parra*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1297; Evermann & Marsh, Fishes of Portorico, p. 187, fig. 52.

D. XII, 18; A. III, 8

Eye 4 Interorbital $4\frac{1}{3}$. Maxillary $2\frac{3}{7}$. Fourth dorsal spine $2\frac{1}{5}$. Longest soft ray 3(!). Second anal spine equal to longest anal ray, longer than third spine, 2. Upper caudal lobe $1\frac{1}{4}$. Pectoral $1\frac{3}{7}$. Ventral $1\frac{4}{7}$.

Two specimens from Fuikbay and Pieskadera by Curaçao, July, 12 cm.

Nomen indig.: *coorcoor pretu* (L.).

Habitat: from Florida to Brazil.

147. *Haemulon carbonarium* Poey.

Haemulon carbonarium, Poey, Memorias, II, p. 176; Cuba; Jordan & Evermann, Fishes of N. & M. Am. II, p. 1300.

D. XII, 16; A. III, 8; Scales: 53—57 vertical rows.

Head 3. Depth $2\frac{4}{5}$. Eye 4. Snout $2\frac{1}{2}$ — $2\frac{3}{4}$. Interorbital slightly convex; Praeorbital 5. Maxillary reaching front of pupil, $2\frac{2}{5}$. Jaws subequal. 14— $14\frac{1}{2}$ gillrakers on lower arch. Fourth dorsal spine $2\frac{1}{6}$; longest soft rays 3— $2\frac{3}{4}$. Second anal spine $1\frac{1}{5}$ — $2\frac{2}{5}$; its tip (not) reaching tip of last soft ray; the longest soft ray 2— $2\frac{1}{7}$, its tip reaching far beyond last ray. Upper caudal lobe $1\frac{1}{3}$. Pectoral $1\frac{1}{3}$ — $1\frac{2}{7}$. Ventral $1\frac{2}{5}$ — $1\frac{1}{2}$.

Colour: a large black praeopercular blotch; axil of pectoral fairly jet-black.

One specimen from Curaçao and one from St. Eustatius, leewardside, 20—50 fathoms.

Nomen indig.: *grunt*. (St. E.)

Habitat: West Indies to Brazil.

148. *Haemulon steindachneri* Jord. & Gilb.

Haemulon caudimacula, Steindachner, Ichth, Beitr. III, 1875; p. 15, nec C. V.

Diabasis steindachneri, Jordan & Gilbert, Bull. U. S. Fish. Comm. 1881; p. 322; Panama,

Haemulon steindachneri, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1301.

D. XII, 15-16; A. III, 9.

Head $2\frac{2}{3}$ — $2\frac{6}{7}$. Depth $2\frac{2}{3}$ — $2\frac{6}{7}$. Eye $3\frac{3}{4}$ —4. Snout $2\frac{3}{4}$ —3-. Interorbital $4\frac{2}{3}$. Maxillary 2^{+} , reaching middle of eye. Teeth subequal, the superior-anterior ones but slightly enlarged. 13 gillrakers on lower arch. Profile with a well-marked gibbosity in the straight line from snout to spinous dorsal. Fourth dorsal spine $2\frac{1}{2}$. Second anal spine $2\frac{1}{3}$ — $2\frac{2}{5}$, reaching past the third, but not to tip of last ray when depressed. Longest anal ray $2\frac{3}{4}$. Upper caudal lobe $1\frac{1}{2}$ — $1\frac{3}{5}$. Pectoral $1\frac{1}{3}$, reaching vent. Ventral $1\frac{3}{4}$.

Colour: general hue very dark; back and sides with still darker longitudinal stripes, following the rows of scales, narrower than the interspaces, continuous but running between them. Belly chocolate; praeopercular blotch very dark; all the fins extremely deep-dusky; ventrals nearly black, pectoral lightest. The blotch on caudal peduncle may extend on caudal fin.

Two specimens from Guanta, Venezuela, and two probably from Curaçao. Length up to 18.5 cm. One specimen has an isopode on its cheek, *Anilocra laticauda* Milne Edw.

149. *Haemulon melanurum* L.

Haemulon melanurum, Cope, Trans Am. Phil. Soc. 1871, p. 471; Jordan & Evermann, Fishes of N. & M. Am. II, p. 1302.

One specimen from St. Martin, two from St. Eustatius (harbour; off Tumble down Dick bay) the largest 20 cm. Occurring also at Curaçao.

Nomen indig.: *Mamelootchie*; *canoltje* (L.); *tocloc*; *sandy goggle* (W.).

150. *Haemulon sciurus* Shaw.

Haemulon elegans, Cuvier & Valenciennes, op. cit. V, p. 227, 1830.

" *sciurus*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1303; Evermann & Marsh, Fishes of Portorico, p. 189, fig. 53.

A great many specimens, up to 26 cM., from Curaçao (Rakito, harbour), Aruba (Punta brabo), St. Martin (Simonsbay lagoon), and St. Eustatius. March—September.

Nomen indig.: *coorco(or)* (L.); *grunt* (W.), sometimes corrupted to *grons* on the Leeward Islands, where it is eaten occasionally.

Habitat: from Florida to Brazil.

151. **Haemulon plumieri** Lacep.

Haemulon arcuatum, Cuvier & Valenciennes, op. cit. IX, 1833, p. 491.

" *plumieri*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1304; Evermann & Marsh, Fishes of Portorico, p. 190, fig. 54.

Two specimens, 16.5—21 cM., from Haiti, coll. de Weger.

Habitat: from Cape Hatteras to Brazil.

152. **Haemulon flavolineatum** Desm.

Haemulon xanthopterum, Cuvier & Valenciennes, op. cit. V, p. 254, 1830.

" *flavolineatum*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1306; Evermann & Marsh, l. c., p. 191.

D. XII, 15; A. III, 8.

Head $2\frac{1}{2}$ — $2\frac{3}{4}$ —3. Depth $2\frac{3}{4}$ —3. Eye $2\frac{2}{3}$ — $3\frac{1}{2}$. Interorbital $3\frac{1}{2}$ —4— $4\frac{1}{2}$. Praeorbital $7\frac{3}{4}$. Snout $2\frac{3}{4}$ —3. Maxillary $2\frac{1}{2}$ — $2\frac{3}{11}$, reaching past front of orbit, not to pupil. Praeopercle coarsely, evenly serrate. Teeth: anterior ones in both jaws longest, in upper jaw 4—5. Posterior teeth in both jaws stronger and much wider apart. Gillrakers 13 on lower arch. Fourth dorsal spine 2— $2\frac{2}{5}$ i. h. longest soft ray: 3. Second anal spine 2; its longest ray $1\frac{5}{6}$ — $2\frac{1}{3}$, reaching beyond tip of last ray. Upper caudal lobe $1\frac{1}{6}$ — $1\frac{2}{5}$. Pectoral $1\frac{2}{5}$ — $1\frac{1}{6}$. Ventral $1\frac{2}{5}$ — $1\frac{1}{2}$, reaching vent.

Colour: angle of mouth dusky.

A large number of specimens captured: Curaçao (Schottegat, harbour, Westpointbay, reefwater, Waaigat), Bonaire (reefs), St. Eustatius, and St. Martin (Simons bay lagoon). Also from Surinam, coll. de Weger. Length up to 20 cM.

Nomen indig.: *rooibekkie* (*coorcco*) (L.); one of the principal marketfishes of Aruba; not so important at Curaçao.

Habitat: West Indies, south to Brazil.

153. **Haemulon (Brachygenys) chrysargyreum** Gnthr.

Haemulon chrysargyreum, Günther, Catalogue Fishes I, p. 314.

Brachygenys chrysargyreus, Jordan & Evermann, l. c. II, p. 1307.

D. XII, 13; A. III, 9.

Head $3\frac{1}{5}$ — $3\frac{2}{5}$. Depth 3 — $3\frac{2}{7}$. Maxillary 3. Second anal spine 3 — $3\frac{1}{2}$, sometimes much stronger than third. Ventral $1\frac{1}{2}$.

Very common about Curaçao (harbour Willemstad, reefwater); Bonaire (Paluleche, Playa). Also captured in the Simonsbay lagoon of St. Martin. Length up to 16 cm.

Nomen indig.: *taki taki* (L.).

Habitat: from Florida to Trinidad.

154. **Haemulon (Bathystoma) rimator** Jordan & Swain.

Haemulon chrysopterum, Cuvier & Valenciennes, op. cit. V, 1830, p. 240; Günther, Catalogue Fishes I, p. 313.

Bathystoma rimator, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1308; Evermann & Marsh, Fishes of Portorico, p. 192, fig. 55.

D. XIII, 14—15; A. III, 8; Scales 7—52—12.

Head 3^+ . Depth 3^+ . Eye $3\frac{1}{3}$ — $3\frac{2}{3}$. Snout $2\frac{2}{3}$ — $3\frac{1}{2}$. Interorbital 4 — $4\frac{1}{2}$. Praeorbital $7\frac{1}{2}$. Maxillary 2 — $2\frac{2}{5}$, reaching front of pupil. Gillrakers: 14—16 on lower arch. Fourth dorsal spine 2 — $2\frac{2}{5}$. Second anal spine $2\frac{1}{2}$ — 3 , reaching base of last ray, longer and stronger than third spine. Longest soft ray $2\frac{3}{5}$ — 3 ; its tip not reaching tip of last rays. Upper caudal lobe $1\frac{1}{5}$ — $1\frac{1}{3}$. Pectoral $1\frac{1}{3}$ — $1\frac{2}{5}$, reaching beyond tip of ventral. Ventral $1\frac{2}{3}$ — $1\frac{3}{5}$.

Captured at Curaçao (harbour). Also one specimen from Puerto Cabello, coll. de Weger. June—August. Length up to 15 cm.

Nomen indig.: *canoltje* (L.).

Habitat: Cape Hatteras to Trinidad.

155. **Haemulon (Bathystoma) aurolineatum** C. V.

Haemulon aurolineatum, Cuvier & Valenciennes, op. cit. V, 1830, p. 237; Günther, Catalogue Fishes I, p. 318.

Bathystoma aurolineatum, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1310.

D. XIII, 15; A. III, 8; L. l. 52.

Head 3. Depth 3^{+} . Eye $3\frac{1}{2}$. Interorbital $3\frac{4}{5}$. Snout $2\frac{3}{4}$. Maxillary 2. Second anal spine somewhat stronger than third.

One specimen of 17 cM. from St. Martin, Simonsbay lagoon, September.

156. *Haemulon (Bathystoma) striatum* L.

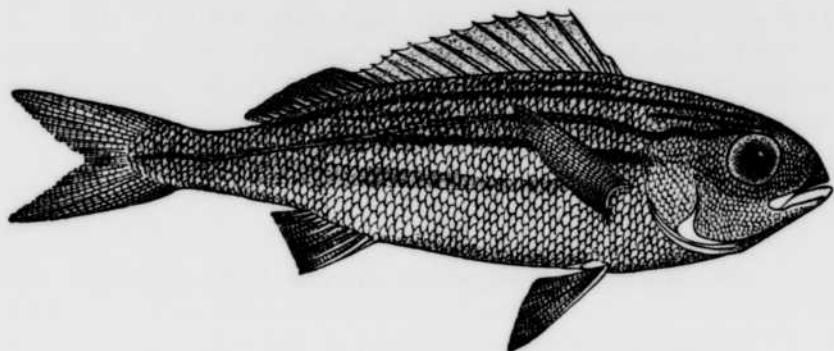


Fig. 26. *Haemulon striatum* L. $\times 7/10$.

Haemulon quadrilineatum, Cuvier & Valenciennes, op. cit. V, 1830, p. 238, pl. 120; Günther, Catalogue Fishes I, p. 316.

Bathystoma striatum, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1310.

D. XIII, 14; A. III, 8; L. l. 54, 70 vertical rows.

Head $3\frac{1}{2}$. Depth $3\frac{3}{7}$, $4\frac{2}{5}$ in total. Eye $3\frac{1}{3}$. Snout $3\frac{1}{3}$, very blunt. Interorbital wide, $3\frac{1}{4}$. Praeopercle concavely arched with irregular sharp serrations. Maxillary oblique, reaching past front of pupil, $2\frac{3}{5}$. Lower jaw little projecting. Both jaws with a single row of moderate teeth strengthened by an inner smaller row anteriorly only. Gillrakers: 21 on lower arch. Fourth dorsal spine 2. Longest soft ray equal to eye. Second anal spine 2^{+} ; longest soft ray $3\frac{1}{5}$. Scales above lateral line in oblique series; mouth with naked streaks before the narines. Vertical fins covered with scales.

Colour: brownish gray; 13 well-defined longitudinal stripes totally, arranged thus: one median, the first pair faint, reaching half the length; the second pair meeting in the nasal region, reaching end of dorsal fin. Third only half the length; fourth from tip of snout over orbit, following the lateral line; fifth through eye; sixth faint, from axil running the whole length.

One specimen, West Indies, exact locality not given, probably from Curaçao.

157. *Haemulon maculicauda* Gilb.

Orthostoechus maculicauda, Gilbert, Proc. Ac. Nat. Sc. Philad., 1862, p. 255.

Haemulon maculicauda, Steindachner, Ichth. Beitr. III, 1875, p. 14.

Orthostoechus maculicauda, Jordan & Evermann, op. cit. II, p. 1313.

D. XIV, 15; A. III, 9; L. 1. 53.

Head $3\frac{5}{9}$. Depth $3\frac{1}{2}$. Eye $3\frac{1}{6}$. Snout $3\frac{1}{6}$. Maxillary $2\frac{3}{5}$ — $2\frac{2}{3}$, reaching front of pupil. Lower jaw protruding. An evident central groove at the symphysis. Interorbital flattish. Praeopercle strongly serrate. Upper anterior and lower posterior teeth enlarged. 16 gill-rakers on lower arch. Scales: sheaths behind the dorsal rays, on the fin membranes; rows on body fairly parallel with the lateral line, even under the soft dorsal. Longest dorsal spine $2\frac{1}{10}$; soft dorsal $3\frac{1}{3}$. Second anal spine much stronger than the third, reaching past base of last ray. Pectoral $1\frac{1}{3}$; ventral $1\frac{3}{4}$ in head.

Colour: brownish, the juv. striping still being clearly visible; one median stripe, another above eye, running to end of dorsal, another through eye to caudal peduncle, where there is a strong jet-black blotch.

One specimen of 13 cM. from Curaçao, Schottegat, March.

Habitat: as yet only from the Pacific coast of Central America, Guayamas to Panama. However we find no reasons for specific separation.

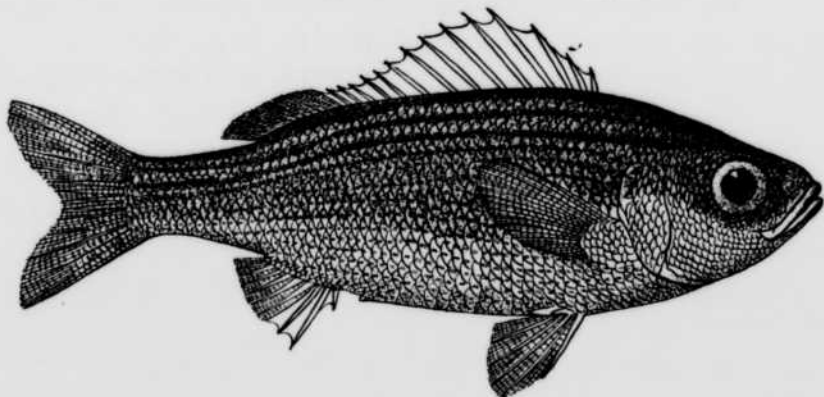
158. *Pristipoma boschmae* nov. spec.

Fig. 27. *Pristipoma boschmae* nov. spec. $\times 7/8$.

D. XIV, $13\frac{1}{2}$; A. III, $7\frac{1}{2}$; Scales 5—53—15.

Head $3\frac{5}{9}$. Depth $3\frac{1}{3}$. Eye $3\frac{1}{3}$. Snout $3\frac{1}{4}$. Body rather elongate; upper profile straight, a very slight depression above eye. Mouth small, maxillary reaching front of pupil $2\frac{3}{4}$. Central groove at chin reduced to a small porus; a pair of maxillary and a pair of snout-pores, so the pores are not like those of *Diagramma*. Interorbital 3. Teeth very small in the equal jaws. Gillrakers 22 on lower arch. Praeopercle very finely serrate, the denticles wide apart. Scales: 70 oblique rows above lateral line, none of them enlarged; 15 transversal rows from lateral line to root of ventral, 11 to root of anal. Low rows of scales on the dorsal membrane behind the rays, the anal nearly naked. First dorsal spine minute, may be absent; fourth longest, 2 in head; last spine short, $2\frac{1}{2}$ in the fourth, the fin being slightly notched; longest soft ray $3\frac{2}{5}$. Length of soft part little more than half the length of spinous part. Second anal spine strongest, overreaching base of last ray. $2\frac{1}{3}$ in head. Anal margin concave. Pectoral $1\frac{1}{4}$ i. h., 4 in length; ventral $1\frac{4}{7}$, caudal furcate.

Colour: uniform; no praeopercular blotch or stripes; a very faint blotch on caudal peduncle.

One specimen of 13 cM., West Indies, locality not given, probably from Curaçao. Perhaps related to *Rhoniciscus* Jordan & Evermann (*Pomadasis*). Named after a zoologist of the Amsterdam University.

159. ***Pristipoma (Anisotremus) surinamense* Bl.**

Pristipoma surinamense, Cuvier & Valenciennes, op. cit. V, p. 273, 1830.

Anisotremus surinamensis, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1318.

" " Evermann & Marsh, Fishes of Portorico, p. 194, pl. 56.

D. XII, 17; A. III, 9; Scales: 6—53—15.

Head 3. Depth $1\frac{1}{5}$. Eye $3\frac{3}{4}$. Snout $2\frac{7}{8}$. Fourth dorsal spine 2^{+} ; highest dorsal rays 3. Second anal spine $1\frac{7}{8}$.

One specimen of 23.5 cM. from the „Otrabanda” along the reef of Curaçao.

Nomen indig.: *booneknaap*, a word of unintelligible dutch origin.

Habitat: Tropical America, from Florida to Brazil.

160. **Pristipoma (Anisotremus) virginicum** L.

Pristipoma rodo, Cuvier & Valenciennes, op. cit. V, 1830, p. 274.

" *virginicus*, Günther, Catalogue Fishes I, p. 288.

Anisotremus virginicus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1322.

Anisotremus virginicus, Evermann & Marsh, Fishes of Portorico, p. 195, fig. 57.

D. XII, 17; A. III, $10\frac{1}{2}$; L. I. 54.

Head $3\frac{1}{6}$. Depth $2\frac{1}{11}$. Eye 4. Snout $2\frac{3}{5}$. Praeorbital $3\frac{2}{3}$. Maxillary $3\frac{1}{3}$, reaching vertical of anterior nostril. Outer teeth enlarged; 10 (!) gillrakers plus rudiments on lower arch. Praeopercle rather sharply serrate. Scales: 11 in a vertical series from beginning of dorsal to lateral line. Pinnal sheaths broad, the anal reaching half of the ray-length. Second dorsal equal to second anal spine, nearly half the length of head. Pectoral reaching second anal spine, 3 in length to tip of middle caudal rays. Ventral not reaching vent.

Four specimens of 18—31 cm. from Curaçao, sea off the harbour of Willemstad and reefwater.

Nomen indig.: *Bandera espagnol* (= spanish flag).

Habitat: Florida to Brazil.

161. **Pristipoma lineatum** C. V.

Pristipoma lineatum, Cuvier & Valenciennes, op. cit. V, p. 287.

" " Günther, Catalogue Fishes I, p. 300.

D. XII, $14\frac{1}{2}$; A. III, 10; L. I. 53 (pores).

Head $3\frac{1}{6}$ in body. Depth $2\frac{2}{3}$ ($3\frac{1}{6}$ in total). Eye 3^{+} i. h. Fourth dorsal spine $2\frac{1}{4}$ i. h. Second anal spine 3. Pectoral $1\frac{1}{3}$.

Colour: A white band along base of dorsal and anal fins for the whole length. One adult female of 11.5 cm. from Surinam, coll. De Weger.

Habitat: Coast of Brazil.

162. **Pristipoma corvinaeforme** Steind.

Haemulon corvinaeforme, Steindachner, Ichth. Notizen VII, 1868, p. 16, Brazil.

Brachydeuterus corvinaeformis, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1326.

D. XII, 15; A. III, 7; L. 1. 52.

Head $3\frac{1}{5}$. Depth $3\frac{1}{4}$. Eye 4. Snout $2\frac{3}{4}$. Praeopercle finely serrate. Maxillary $3\frac{1}{2}$. 13 Gillrakers + rudiments on lower arch. First dorsal and anal spine minute. Second and third anal spines 3, the second stronger. Pectoral $1\frac{1}{5}$ i. h. Ventral 2-.

Colour: Iris fiery red. Dusky margin to spinous dorsal only. A continuous diffuse, dusky shoulder-band.

One specimen of 17 cM. West Indies; no exact locality known, probably from Trinidad.

Habitat: West Indies, south to Brazil.

163. *Conodon nobilis* L.

Conodon antillanus, Cuvier & Valenciennes, l. c. V, 1830, p. 156.

„ *plumieri*, Günther, Catalogue Fishes I, p. 304.

„ *nobilis*, Jordan & Evermann, Fishes of N. & M. Am., II, p. 1324.

Two specimens of 17—26.5 cM. were collected by Mr. De Weger at Jeremie, Haiti, January and at Carupano, Venezuela, August.

Habitat: West Indies to Brazil.

SPARIDAE.

164. *Calamus calamus* C. V.

Pagellus calamus, Cuvier & Valenciennes, op. cit. VI, 1830; p. 206, pl. 152.

Chrysophrys calamus, Günther, Catalogue Fishes I, p. 487.

Calamus calamus, Jordan & Evermann, Fishes of N. & M. Am., II, p. 1349.

„ „ Evermann & Marsh, Fishes of Portorico, p. 201, fig. 58.

D. XII, 11—12; A. III, 10—11; L. 1. 53 (56—57 pores in total).

Head $3\frac{1}{7}$ — $3\frac{2}{9}$ (4 — 4^+ in total). Depth $2\frac{1}{7}$ — $2\frac{2}{11}$, ($2\frac{5}{7}$ — $2\frac{3}{4}$ in total). Eye $3\frac{1}{3}$ — $3\frac{1}{2}$. Maxillary $2\frac{1}{3}$ — $2\frac{1}{2}$. Canini $\frac{6}{8}$ — $\frac{6}{9}$, the outer ones projecting; a short accessory row of molars in both jaws. Scales: distance from beginning of scales on head to anterior nasal tube: 1 — $1\frac{2}{7}$ \times eye: 7 rows on the cheeks. Fourth dorsal spine $2\frac{1}{2}$; the dorsal spines are placed as in the figure of Jordan & Evermann, viz. the even numbers on the right, the uneven on the left side of the membrane, or just in the other way, („heteracant-

hous"). Upper caudal lobe $3^+ - 3\frac{1}{2}$. Pectoral base $4\frac{1}{3} - 4\frac{5}{6}$ in head (without flap), $2\frac{2}{3} - 2\frac{7}{8}$ in length. Ventral $4\frac{1}{2} - 4\frac{2}{3}$ in length.

Colour: Longitudinal stripes visible.

Differs from *C. proridens* chiefly in the fewer canini in the upper jaw, the longer pectoral and ventral fins, the shorter dorsal spines and the larger scales.

Two specimens, one from St. Eustatius, one from Puerto Cabello, 31 cm.

Nomen indig.: *porgy* (W.).

Habitat: West Indies to Florida.

165. *Calamus bajonado* Bl. Schn.

Sparus bajonado, Bloch & Schneider, Syst. Ichth. p. 284.

Calamus bajonado, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1352; Evermann & Marsh, Fishes of Portorico, p. 202, pl. 25.

" *leucosteus*, Jordan & Gilbert, in Jordan, Catalogue Fishes N. A. 1885, p. 91.

D. XII, 10; A. III, 10; L. 1. 51. (54 pores).

Head $2\frac{3}{4} - 3\frac{1}{4}$, ($3\frac{2}{3} - 4^+$ in total). Depth $2\frac{1}{5} - 2\frac{1}{3}$, (3 in total).

Eye $2\frac{3}{4} - 3\frac{2}{5}$. Suborbital $2\frac{1}{2} - 3$. Praeorbital $1\frac{5}{7}$. Maxillary $2\frac{1}{2} - 2\frac{2}{3}$.

Canini: $\frac{6-8}{8-10}$. Molars: $\frac{3\frac{1}{2}}{2\frac{1}{2}}$ rows.

Fourth dorsal spine $2\frac{1}{4} - 2\frac{2}{5}$ i. h. Pectoral $2\frac{4}{5} - 3$ in length. Ventral $1\frac{1}{2}$ i. h.

Colour: The jaw vaguely cross-barred with a very distinct vertical streak from eye to angle of mouth. All the vertical fins spotted and barred with brown.

Several specimens, juv. and adult, from Curaçao (Nieuwpoort, Reefwater), St. Martin (Simonsbay lagoon) and Haiti. Up to 23 cm.

Nomen indig.: *Djente maisji* (Maize-tooth) (L.).

Habitat: West Indies, the most abundant of the genus.

N.B. All the specimens agree fairly well with the description of *C. leucosteus* Jordan & Gilbert, which may be a local, more northern race, described in an adolescent stage.

166. *Pagrus vulgaris* C. V.

Pagrus vulgaris, Cuvier & Valenciennes, op. cit. VI, 1830, p. 142.

" " Günther, Catalogue Fishes I, p. 466.

Pagrus pagrus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1356.

D. XII, 10; A. III, 8; L. 1. 56.

Head $3\frac{1}{7}$ — $3\frac{2}{7}$ (4^+ in total). Depth $2\frac{1}{2}$ — $2\frac{2}{3}$ (3 — $3\frac{1}{3}$ in total). Eye $3\frac{1}{5}$ — $3\frac{3}{4}$. Snout $2\frac{1}{5}$ — $2\frac{1}{3}$. Third dorsal spine = fourth, equal to snout. Third anal spine 3 — $3\frac{2}{3}$ — 4 i. h. Pectoral reaching third anal spine or first soft ray, half an eye's length longer than the head.

Two specimens from the pargo bank of Aruba, August, 32—37.5 cM., and one juv. from the coast of Venezuela, from a depth of 60 M.

Nomen indig.: *Booneknaap* (L.).

Habitat: Both coasts of the Atlantic; on this side from Charleston to Uruguay. On comparison with West African specimens of 16—18 cM. (see second part of this paper), we cannot find indeed any noteworthy difference.

167. *Sargus unimaculatus* Bl.

Sargus unimaculatus, Cuvier & Valenciennes, op. cit. VI, 1830, p. 62.

" " Günther, Catalogue Fishes I, p. 446.

Archosargus unimaculatus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1359.

" " Evermann & Marsh, p. 204, pl. 26.

D. XIII, 11; A. III, 9—11; L. 1. 45—48.

Head $3\frac{1}{2}$. Depth $2\frac{2}{13}$. Profile in young distinctly concave from eye to nape. The first of the XIII dorsal spines is entirely hidden in the flesh; of this procumbent spine no trace is to be seen externally and it has often been overlooked. Fifth dorsal spine $2\frac{1}{4}$, a trifle longer than second anal spine. Pectoral $2\frac{1}{3}$ — $2\frac{1}{2}$. Ventral $4\frac{2}{7}$.

Colour: A broad, wavy band between dorsal and lateral line; longitudinal blue stripes evident; a distinct blotch behind humeral region. Young specimens lack the dusky pectoral base.

Several specimens from Curaçao (reefwater, Schottegat) and some from Guanta, Venezuela. Length up to 27 cM.

Nomen indig.: *Briem* (pron.: „breem”) (L.).

Habitat: from Florida to Rio Janeiro, common.

MULLIDAE.

168. *Upeneus maculatus* Bloch.

Upeneus maculatus. Cuvier & Valenciennes, l. c. III, 1829, p. 478.

Upeneus maculatus, Jordan & Evermann, Fishes of N. & M.
Am. I, p. 858.

" " Evermann & Marsh, Fishes of Portorico,
p. 120, pl. 4.

A large number of specimens captured at Curaçao (Schottegat, harbour, reefwater). St. Martin (Simonsbay, lagoon). St. Eustatius; Venezuela (Puerto Cabello), and Haiti (Aux cayes), the last of the collection-De Weger. March—September. Length 9—27 cM.

Nomen indig.: *Barbier-sjouwer*, *B. mandienga* (L.), *spotted goatfish* (W.).

Habitat: From Florida to Brazil.

169. *Upeneus martinicus* C. V.

Upeneus martinicus, Cuvier & Valenciennes, op. cit. III,
1829, p. 483.

" " Jordan & Evermann, Fishes of N. & M.
Am. I, p. 859.

" " Evermann & Marsh, Fishes of Portorico,
p. 121, pl. 5.

The young have a much more „naseous” profile.

Several specimens, captured at Curaçao (Westpointbay; harbour, together with the other species; reefwater; Waaigat); Bonaire; St. Eustatius. Also from Haiti (Aux Cayes). Length 11—27 cM.

Nomen indig.: *Barbier* (L.); *Goatfish* (W.).

Habitat: West Indies, north to Key West.

Both species are sold in the market of Willemstad.

CAPROIDAE.

170. *Antigonia capros* Lowe.

Antigonia capros, Lowe, Proc. Zool. Soc. London, 1843, p. 85.

" " Günther, Catalogue Fishes II, p. 497.

" " Jordan & Evermann, Fishes of N. & M. Am.
II, p. 1665.

One specimen of 17.5 cM. from the playa of Bonaire.

Nomen indig.: *Chapin* (i. e. „great”).

Habitat: Widely distributed in Atlantic and Pacific.

CHAETODONTIDAE.

171. *Ephippus faber* Broussonet.

Ephippus gigas, Günther, Catalogue Fishes II, p. 61; Osorio, Journ. Sc. M. Phys. Nat. Acad. Sc. Lisboa II^a serie, II, 1890, p. 110 (St. Thomé).

" *faber*, Günther, Catalogue Fishes II, p. 61.

Chaetodipterus faber, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1688.

Juv. has short, strong spines in the dorsal and a normal membrane between them. Recorded by Dr. Boeke from St. Eustatius; a young of 82 mM. from Venezuela brought by Mr. De Weger.

Nomen indig.: *ocean cobbler* (W.).

Habitat: Atlantic: from Cape Cod to Rio Janeiro.

Recorded by Osorio and by me from West Africa (See second part of this paper).

172. *Chaetodon ocellatus* Bl.

Chaetodon bimaculatus, Cuvier & Valenciennes, op. cit. VII, 1831, p. 67.

" " Günther, Catalogue Fishes II, p. 9.

" *ocellatus*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1674.

D. XIII, 20—21; A. III, 17; P. 14; C. 17; L. l. 34; L. tr. 5—15. Head 3. Depth 1½.

Colour: The dorsal blotch may be nearly faded.

Six specimens, from Curaçao; Bonaire (paluleche), and Haiti, (Aux Cayes).

Nomen indig.: *Tjamba blanco* (L.).

Habitat: West Indies, north to Rhode Island.

173. *Chaetodon sedentarius* Poey.

Chaetodon gracilis, Günther, Catalogue Fishes II, p. 20.

" *sedentarius*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1675.

" " Evermann & Marsh, Fishes of Portorico, p. 249, pl. 34.

D. XIII, 19—22; A. III, 20; P. 13—16; C. 20—22; L. 1. 35—37; L. tr. 5—18.

Head 3— $3\frac{2}{5}$. Depth. $1\frac{3}{10}$ — $1\frac{1}{2}$. Eye $2\frac{4}{5}$ — $3\frac{1}{5}$. Snout $2\frac{7}{10}$ —3.

Four specimens from St. Eustatius and the Simonsbay lagoon of St. Martin.

Nomen indig.: *butterfly fish* (W.).

Habitat: West Indies; scarce.

174. *Chaetodon striatus* L.

Chaetodon striatus, Cuvier & Valenciennes, op. cit. VII, 1831; p. 10; Günther, Catalogue Fishes II, p. 8.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1677.

" " Evermann & Marsh, Fishes of Portorico, p. 249, pl. 34.

D. XII, (19—) 21 (—22); A. III, (16—) 17 (18—); P. 13—14; C. 22; L. 1. 37; L. tr. 8—18.

Head $2\frac{1}{2}$ — $3\frac{1}{6}$. Depth $1\frac{1}{3}$ — $1\frac{1}{2}$. Eye 3—4. Snout $2\frac{1}{2}$ —3.

Colour: In the young there is a remarkable black ocellus which disappears in the adult, being assimilated in the fourth crossbar. It is situated in the same place as in the *Ch. capistratus*; the disappearance of ocelli is a common occurrence in the genus and is achieved here in a juvenile stage. Still younger specimens, showing the larval shields, differ from the adult in the lacking of a crossband on the tail.

A large quantity gathered; at Curaçao (Schottegat, harbour, reefwater); Aruba (playa); Bonaire; St. Martin; St. Eustatius; also from Haiti and Venezuela, coll. De Weger, May—September. Length: up to 11.5 cm.

Nomen indig.: *Tjamba geel* (L.); *butterfly fish* (W.).

Habitat: West Indies to Brazil. Recorded from St. Thomé by Osorio.

175. *Chaetodon capistratus* Linn.

Chaetodon capistratus, Cuvier & Valenciennes, op. cit. VII, p. 64, 1831; Günther, Catalogue Fishes II, p. 12.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1677.

" " Evermann & Marsh, Fishes of Portorico, p. 249, pl. 35.

Chaetodon bricei, H. M. Smith, Bull. U. S. Fish Comm. 1897, p. 102.

D. XIII, 18—21; A. III, 16—19; P. 14; C. 18—21; L. 1. 37—40; L. tr. (4) 6—16 (19).

Head $2\frac{3}{4}$ — $3\frac{1}{5}$. Depth $1\frac{1}{2}$ — $1\frac{3}{4}$. Eye $2\frac{2}{3}$ — $2\frac{3}{10}$. Snout $2\frac{1}{2}$ —3.

Colour: Juv. have a black dorsal fin-ocellus immediately above the other and of about half its size. At a length of 28 mm. this ocellus is still very evident, at 32 mm. it has nearly disappeared. This stage has been described as *Ch. bricei* Smith.

Captured at Curaçao (reefwater, Wacao, Piescaderabay, harbour); Bonaire; Aruba (playa); St. Martin (Simonsbay lagoon); also from Haiti and Trinidad, coll. De Weger. Length: 14 cm.

Nomen vulgare: *Tjamba* (L.).

Habitat: West Indies.

176. *Pomacanthus paru* Bl.

Pomacanthus paru, Cuvier & Valenciennes, op. cit. VII, 1831, p. 205.

" " Günther, Catalogue Fishes II, p. 55.

" " Jordan & Evermann, Fishes of N. & M. America, II, p. 1680.

D. X, 29—32; A. III, 21—24; P. 18—20; C. 16—20; L. 1. 78—90; L. tr. 14—40 (42).

Eye $2\frac{1}{2}$ —3. Snout. 2— $2\frac{1}{2}$.

Colour: Some specimens have the ground colour: black; others: of a rich brown. In all the young, up to 13 cm., the four edges of the caudal fin are white, as is the case in *P. arcuatus*, but in that species the black area which is left in the middle is much smaller. Moreover the juv. of *P. arcuatus* show a median white line on both lips, which is absent here. Point of dorsal brown, pectoral coloured at base only. Hind border of dorsal and anal not yellow, but white in life.

Many specimens from Curaçao (reefwater, harbour), Bonaire; generally common. The largest 21 cm., but specimens of 45 cm. recorded by Dr. Boeke.

Nomen vulgare: *tjamba prètu* (prètu = „black”) (L.).

Habitat: West Indies, south to Bahia.

177. *Pomacanthus arcuatus* L.

Pomacanthus cingulatus, Cuvier & Valenciennes op. cit. VII, 1831, p. 209.

Pomacanthus arcuatus, Jordan & Evermann, Fishes of N. & M. Am., II, p. 1679.

Pomacanthus arcuatus, Evermann & Marsh, Fishes of Porto-rico, p. 251, fig. 69.

D. IX, 30—32; A. III, 23—24, C. 18; P. 18—19; L. l. 76; L. tr. 7—27. Head $3-3\frac{1}{3}$. Depth $1\frac{1}{3}$. Eye $3\frac{1}{4}-3\frac{1}{2}$. Snout $2-2\frac{1}{4}$.

Colour: A white spot at the symphysis of the lower jaw.

Several specimens from Bonaire; Curaçao (Schottegat); St. Eustatius and Haïti (March—September). Length 12—20.5 cm.

Nomen indig.: *zwarte engel* (= *black angel*) (W.); *tjamba*. (L.)

Habitat: West Indies, south to Bahia.

178. **Holacanthus tricolor** Bl.

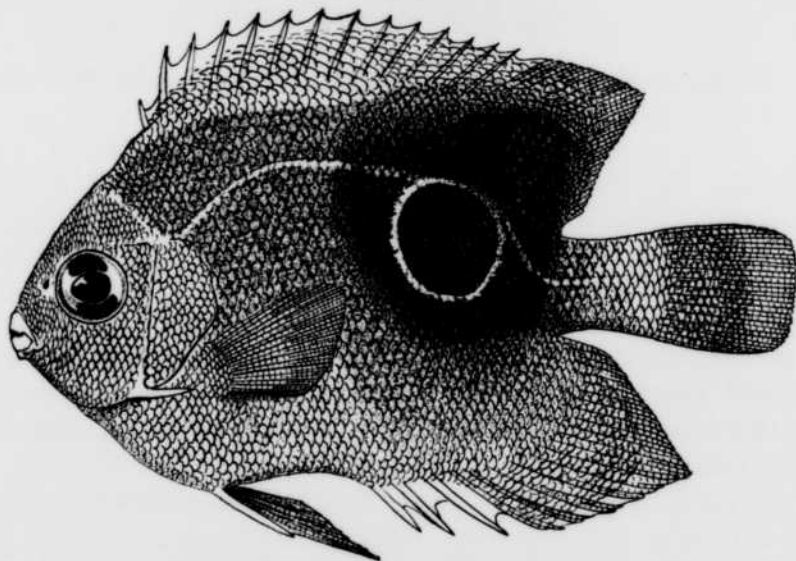


Fig. 28. *Holacanthus tricolor* Bl. juv. $\times 275$.

Holacanthus tricolor, Cuvier & Valenciennes, op. cit. VII, 1831, p. 162.

" " Cope, Tr. Am. Philos. Soc. 1871, p. 474. St. Martin.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1684.

" " Evermann & Marsh, Fishes of Porto-rico, p. 251, pl. 36.

D. XIV, 18—19; A. III, 18—20; L. l. 44—48, about 36 pores. Head $3-3\frac{3}{4}$. Depth $1\frac{1}{2}-1\frac{2}{3}$. Eye $3\frac{1}{2}-4$. Snout $2\frac{1}{2}$.

Colour: The black middle area on the sides increases with age; in a young of 39 mM. this area occupies no more than the upper-posterior parts of the sides and the basal part of the soft dorsal, leaving the rest orange. There is a large, pale-edged ocellus in the middle of it, (see the fig.) which will probably soon be absorbed by the fortifying black-violet pigment. Together with the non-produced vertical fins and the filamentous ventrals, these markings give to the young (from Bonaire) the appearance of some other species.

Several specimens: Curaçao (reefwater); and the playa of Bonaire; St. Eustatius. Length 39—230 mM.

Nomen indig.: *tjamba* (L.), *svede* (W.).

Habitat: West Indies, from Bermudas to Bahia.

179. *Holacanthus ciliaris* L.

Holacanthus ciliaris, Cuvier & Valenciennes, op. cit. VII, 1831, p. 154; Günther, Catalogue Fishes II, p. 46.

Angelichthys ciliaris, Jordan & Evermann, Fishes of N. & M. Am., II, p. 1684.

" " Evermann & Marsh, Fishes of Portorico, p. 252, pl. 37.

Colour: Body reddish violet with yellow margins to the scales. Anal red, terminating orange, with blue margin; caudal orange; pectoral yellow with sky-blue blotch at base.; ventrals yellow.

One fine specimen of 22 cM. from St. Eustatius, in shallow water off the Bay, August.

Nomen indig.: *yellow angel* (W.); at Curaçao, where it also occurs: *rey di tjamba* (= the „king” of the family).

Habitat: West Indies, south to Bahia.

ACANTHURIDAE.

180. *Acanthurus caeruleus* Bl. Schn.

Acanthurus caeruleus, Cuvier & Valenciennes, op. cit. X, 1835, p. 179; Günther, Catalogue Fishes III, p. 336.

Teuthis caeruleus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1691.

" " Evermann & Marsh, Fishes of Portorico, p. 253, pl. 38.

D. IX, 27; A. III, 24.

Head $3\frac{1}{2}$. Depth $1\frac{1}{2}$. Eye in the middle of the distance between mouth and dorsal fin. Profile a little convex in front of the eye. Superior lobe of caudal longer than inferior.

Colour: Body, dorsal and anal fin dark bluish brown with narrow longitudinal pale blue streaks. Lips pale. Caudal fin lighter brown with a black border. Pectoral yellowish.

Several specimens from Curaçao (reefwater); St. Eustatius, leeward side; from Haiti. Port-au-Prince. January—June. Length up to 29.5 cm.

Nomen indig.: *kleinvissie blauw* (L.) (dutch; „little bluefish”); *blue doctor* (W.).

Habitat: From Florida to Bahia.

181. *Acanthurus hepatus* L.

Acanthurus chirurgus, Cuvier & Valenciennes, op. cit. X, p. 168; Günther, Catalogue Fishes III, p. 329.

Teuthis hepatus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1691.

” ” Evermann & Marsh, Fishes of Portorico, p. 254.

D. IX, 25; A. III, 22.

The young much paler than the adults.

A great many specimens from Curaçao (reefwater, Waaigat, Wacao); Bonaire, Puerto Cabello; Venezuela. Length up to 23 cm.

Nomen indig.: *kleinvissie blanco* (i. e. little pale fish) (L.).

Habitat: From Florida to Brazil, West Africa.

182. *Acanthurus bahianus* Casteln.

Acanthurus tractus (Poey), Jordan & Gilbert, Synopsis, p. 941.

Teuthis bahianus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1693.

” ” Evermann & Marsh, Fishes of Portorico, p. 254.

D. IX, 24; A. III, 22.

Head 5. Depth $2\frac{1}{5}$. Eye $4\frac{1}{2}$.

Many specimens from Curaçao (reefwater, harbour, Wacao); playa of Aruba; from the leeward side of St. Eustatius, and from Haiti (coll. De Weger). Length up to 18 cm.

Nomen indig.: *kleinvissie préteu*, or *kleinvissie geel* (L.) *yellow doctor* (W.).

Habitat: From Florida to Bahia.

N.B. Young specimens of *A. hepatus* and *A. bahianus*, in which the finer colour markings have not been preserved, can be distinguished by the dark caudal spine and the white margin of the more emarginate tail in the former, the white caudal spine and the truncation of the tail in the latter species.

POMACENTRIDAE.

183. *Chromis marginatus* Casteln.

Heliastes marginatus (Castelnau), Günther, Catalogue Fishes IV, p. 64.

Chromis marginatus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1546.

" *atrilobata*, Gilbert, Proc. Ac. Nat. Sci. Philad. 1862, p. 149.

D. XI—XII, 12; A. II, 12; L. 1. 29—30; L. tr. 4—9.

Head $3^{+}-3\frac{2}{3}$. Depth $2^{+}-2\frac{2}{5}$. Eye $3-3\frac{1}{5}$. Snout $3\frac{1}{2}$. Pectoral little longer than head, reaching $\frac{3}{4}$ to anal. Upper lobe of caudal $3\frac{1}{2}$ in total. Ventrals a little filamentous, reaching end of anal papilla.

Colour: A sulphur blotch behind dorsal, in one case absent. A large black blotch on pectoral base and in axil. Last rays of dorsal paler, of anal darker than of the other rays.

Several specimens from Westpointbay, Curaçao and other localities thereabout. Also some in the Coll. De Weger (Trinidad?).

Nomen indig.: *steltje* (L.).

Habitat: Atlantic coast of South America.

184. *Pomacentrus fuscus* C. V.

Pomacentrus fuscus, Cuvier & Valenciennes, op. cit. V, 1830, p. 432.

" " Günther, Catalogue Fishes IV, p. 31.

Eupomacentrus fuscus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1552.

" " Evermann & Marsh, Fishes of Porto-rico, p. 224, pl. 27.

D. XII, 15; A. II, (13—) 14 (—15); L. l. 27—28; L. tr. 3—10.

Head 2. Depth 2, increasing with age to $1\frac{2}{3}$. Anterior profile flattening with age. Eye 3. Snout 3.

Colour: Ground colour from very dark, nearly black, shading off to a pale brown. Seldom the whole fish is plainly dark-coloured; as a rule the fronto-dorsal parts are the most deeply tinged, the colour becoming lighter in a vertical or in a longitudinal direction. A blue spotting may be totally absent, be confined to snout and praeorbital or stretch over the head. There is a pale area in the peduncle-region which may stretch out more or less on caudal fin and the hind parts of the other vertical fins; there may result a wholly yellow tail. A faint crossbarring on sides may be more or less pronounced; as to an ocellus on dorsal fin or blotch on back of caudal peduncle, in one case (young) faint traces of both may be seen. They play a more important role in the following species. Pectoral-axillary spot practically indistinct to very strong. The blue anal spot is always wanting. Ventrals always dusky or black.

Several specimens from Curaçao (reefwater, harbour, Piescaderebay); St. Eustatius; Trinidad. Length up to 10 cm.

Nomen indig.: *ladronchie pretu* (pap.: ladrontsjie pretoe, i. e. black thief) (L.).

Habitat: From Florida to Brazil.

***Pomacentrus fuscus* forma *planifrons* C. V.**

Pomacentrus planifrons, Cuvier & Valenciennes, op. cit. V, 1830, p. 431, Martinique; Günther, Catalogue Fishes IV, p. 33.

Eupomacentrus planifrons, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1559.

The depth is conspicuously more than in the forma typica, $2\frac{1}{3}$ — $2\frac{3}{7}$ in total length. Vertical fins more elevated, the longest dorsal ray being contained $4\frac{1}{2}$ in the total. Upper profile flat.

Ground colour dark, paler towards belly; a large axillary blotch on pectoral base and *an evident blotch on caudal peduncle*. No blue points. Ventrals dark.

This habitus is in all respects very different from *typical* *P. fuscus*, but graduations are present in our material, which prove *P. planifrons* to be simply one of the elementary species of *P. fuscus*, distinguished by the deep form and a peduncle-blotch in the *adult*.

185. *Pomacentrus analis* Poey.

Pomacentrus analis, Poey, Synopsis, p. 327, Havana.

Eupomacentrus analis, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1554.

" " Evermann & Marsh, Fishes of Portorico, p. 224.

D. XII, 13—16; A. II, 13—15; P. 14—15; L. 1. 27—30; L. tr. 3—10.

Head $3-3\frac{3}{7}$. Depth $2-2\frac{1}{2}$. Eye $3-3\frac{1}{2}$. Snout $3-3\frac{1}{2}$. Praeopercle strongly serrate. Ten small gillrakers on lower arch. Dorsal and anal angulated, pectoral not. Ventral reaching past vent.

Colour: The shading off to a paler hue is more in a vertical sense than in *P. fuscus*. In typical specimens there is no blue spotting, but always a distinct chalky anal spot. Caudal peduncle and fin are always pale, this area stretching on in some cases to last rays of dorsal and anal. A faint crossbarring on sides. There is a small blotch (no ocellus!) on the dorsal fin, but never a blotch on back of caudal peduncle. Axillary pectoral spot small, but distinct. Ventrals always of a pale dusky hue.

Distinct from this forma typica is the:

***Pomacentrus analis* forma *chrysus* Bean.**

Eupomacentrus chrysus, Bean, Catal. Bermudan Pishes, Field Columb. Mus. Publ. (VII), 2, 1906, p. 61.

There is no pale area in the peduncle region and a moderate spotting on body (becoming darker in spirits); the crossbars on body are more pronounced, but the main difference is: the distinct, large ocellus on dorsal fin and back of caudal peduncle, the latter being sometimes absent (transient forms to *P. leucostictus*). The pectoral axillary spot is small and more or less diffuse.

More aberrant is the

***Pomacentrus analis* forma *xanthus* mihi.**

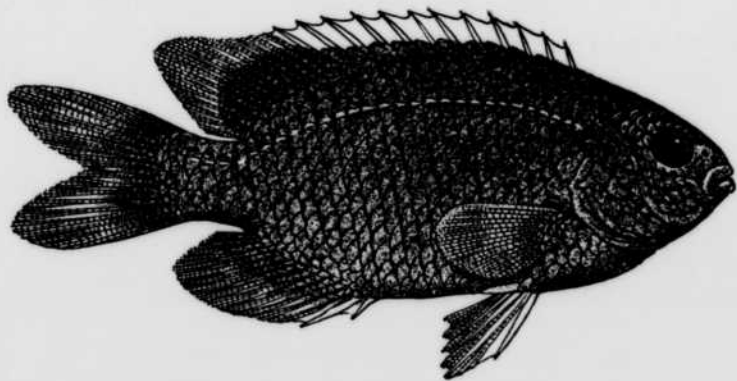


Fig. 29. *Pomacentrus analis* fa. *xanthus*, nat. size.

which has decidedly another appearance, not united by transient forms with the forma typica in our material.

D. XII, 16; A. II, L. l. 26.

Form elongate, $2\frac{1}{2}$ in body. *Back thick, contrasting sharply* with the dorsal *fin-sheath*, rounded. Body and fins coloured *uniformly yellow*; no vertical bars; a small, faint axillary marking. (Has been in formaline).

Pomacentrus analis has been captured about Curaçao (reefwater, Waaigat, Schottegat); Bonaire; one from St. Eustatius. Length up to 10 cM.

Nomen indig.: *ladronchie* (i. e. little thief) (L.).

Habitat: as the former species.

186. *Pomacentrus leucostictus* Müller Trosch.

Pomacentrus leucostictus, Günther, Catalogue Fishes IV, p. 31.

Eupomacentrus leucostictus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1555.

" " Evermann & Marsh, Fishes of Portorico, p. 226.

D. XII, 15; A. II, 13; L. l. 27; L. tr. 3—9.

Head 3. Depth 2. Eye 3. Snout 3.

Colour: Distinguished at first sight by the orange belly and the blue upper parts with a moderate to profuse blue spotting. A small but distinct axillary spot. The peduncle-region may be coloured as the rest of the body, or yellow; in the second case the caudal fin is also yellow. There is never a blotch on the back of caudal peduncle, but always a distinct ocellus or blotch on the dorsal fin. Always a distinct chalky anal spot. Ventrals yellow or pale dusky.

Several specimens from Curaçao (Cornelisbay, Fuikbay, reef)

Nomen indig.: *ladronchie blauw* (i. e. blue thief) (L.).

Habitat: From Florida to Bahia, also from West Africa.

The genus *Pomacentrus* is split into a great number of elementary species. As long as we have no monography of the genus, based upon a careful breeding and crossbreeding of all these forms, we prefer to group them together into three Linnean species (just as the natives do!!)

187. *Abudefduf concolor* Gilb.

Euschistodus concolor, Gilb. Proc. Ac. Nat. Sc. Philad., 1862, p. 145, Panama.

Euschistodus analogus, Gilb. Proc. Ac. Nat. Sc. Philad., 1863, p. 219. Aspinwall.

Nexilarius concolor, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1559.

Abudefduf analogus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1563.

D. XIII, 12; A. II, 10—11; L. 1. 25—27, 19—20 pores; L. tr. 3—9.

Head 2.9. Depth $1\frac{3}{4}$. Eye $3\frac{1}{2}$ —4. Snout $2\frac{2}{5}$ —3. Interorbital $2\frac{3}{4}$ —3. Praeorbital at end of maxillary 5 i. h. Suborbital adnate externally to the cheek with small scales. 41 teeth in both jaws (in lower jaw a few are wanting). Fifth dorsal spine $2\frac{2}{5}$ in height. Upper caudal lobe longest, lunate, not sharply pointed. Pectoral rounded, its length equal to head. Ventral equal to pectoral.

Colour: olivaceous; traces of 5 crossbands on body, not on caudal peduncle. Membranes of dorsal, anal and ventral dusky.

Two specimens of 14—18 cM. Bonaire and the playa of Aruba, July.

Nomen indig.: *catabalie pr  tu* (pap. katabalie pretoe). (L.)

Habitat: Atlantic & Pacific coast of Central America.

N.B. Of both *Euschistodus concolor* and *analogus*, is said by the author that they resemble very much *Abudefduf declivifrons*; their identity is very probable, the occurrence of the same species in Atlantic and Indopacific being a common fact in this family.

188. *Abudefduf saxatilis* L., var. *marginatus* Bl.

Chaetodon marginatus, Bloch, Martinique.

Glyphidodon troschelii, Gilb., Pr. Ac. Nat. Sc. Philad. 1862, p. 150 (Pacific).

Abudefduf saxatilis, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1561.

” ” Evermann & Marsh, Fishes of Portorico, p. 227, fig. 64.

Glyphidodon saxatilis, Cuvier & Valenciennes, l. c. V, p. 446, 1830; G  nther, Catalogue Fishes IV, p. 35.

D. XIII, 11—13; A. II, 12; L. 1. 28—30, 21 pores; L. tr. (3) 4—(10) 12.

Head 2.7—3. Depth $1\frac{1}{2}$ —1.7. Eye $2\frac{1}{2}$ — $3\frac{1}{5}$. Snout 3—4.

Several specimens from Cura  o (pools in the coralreef, Schottegat); Bonaire (playa); Trinidad; Ha  ti; la Guayra-Venezuela; St. Martin.

Length up to 15 cM. One specimen with a *Cymothoa excisa* on the gills.

Nomen indig.: *catabalie* (L.); *pilot fish* (W.).

Habitat: The species is found in tropical waters, in the Atlantic as well as in the Indopacific. The Atlantic variety *marginatus* Bloch (to be distinguished from the var. *saxatilis* L., *coelestinus* C. V., *abdominalis* Q. G.), occurring from Florida to Uruguay.

189. ***Abudefduf taurus* Müll. & Trosch.**

Glyphidodon taurus, Müller & Troschel, Schomburgk, Hist. of Barbados, p. 674, 1848 (probably the same).

Glyphidodon rudis, Günther, Catalogue Fishes IV, p. 37, 1862.

Abudefduf rudis and *taurus*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1563.

D. XII, 12; A. II, 10; L. I. 26.

Depth 2 in length. Suborbital broader than in *saxatilis*. Praeopercle entire. Maxillary reaching front of eye. Lobes of caudal fin rounded. Ventral just reaching anal.

Colour: very different from *A. saxatilis*. There are *five* broad, dark crossbars on back, the first with a distinct white line before it, which meets its fellow of the other side on occiput; the second with the fourth and the fourth with the fifth bar extending in pairs on the dorsal fin, forming there two dark blotches (together). A dark blotch on back of caudal peduncle. Anal, caudal, pectoral and tip of soft dorsal translucent. No trace of axillary pectoral blotch!

Three specimens from Curaçao 20—27 mm.

Habitat: Known from Cuba (Poey), Barbados and the Tortugas (Jordan & Thompson).

190. ***Abudefduf chrysurus* C. V.**

Glyphidodon chrysurus, Cuvier & Valenciennes, op. cit. V, p. 476, 1830; St. Thomas.

" " Günther, Catalogue Fishes IV, p. 57.

Microspathodon chrysurus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1567. (Account of Poey, on a Cuban specimen).

D. XIII, 15; A. II, 13; L. I. 28.

Head $2\frac{3}{5}$. Depth $1\frac{4}{5}$. Eye 4. Snout $2\frac{2}{5}$. Nostril small, pore-like. Praeorbital $3\frac{1}{4}$. Interorbital $2\frac{5}{6}$. Teeth movable in upper jaw only. Caudal peduncle $2\frac{1}{6}$ i. h. Longest dorsal rays $1\frac{1}{2}$ i. h. Anal pointed, little falcate; longest rays nearly equal to head. Pectoral equal to head, little falcate.

Colour: brown, except caudal. Ventrals, tip of snout and margin of spinous dorsal-membrane black. Some blue points on head.

One specimen from the reefs of Curaçao, 14 cm.

There occur in the collection two young fishes which apparently belong to this species. Ventrals long, reaching not 4th anal soft ray. Praeopercle entire.

Colour: very dark, nearly black, vaguely crossbarred by five broad dark bars, which become confluent below the lateral and have a tendency to disappear. Head profusely dotted with black points. No trace of axillary blotch. Spinous dorsal and ventral black; soft dorsal, anal and pectoral paler, caudal abruptly translucent.

Two specimens from Schottegat, Curaçao, of 15 mm.

Nomen indig.: *Rey pandu* (pap.: rey pandoe) (L.).

Habitat: known from Cuba, St. Thomas, Caribbean sea, W. African coast.

LABRIDAE.

191. *Lachnolaimus maximus* Walb.

Lachnolaimus suillus, *aigula*, *dux*, *caninus*, *psittacus*, Cuvier & Valenciennes, l. c. XIII, 1830; pp. 283, 277, 285, 288, 291.

" *falcatus*, Günther, Catalogue Fishes IV, p. 87.

" *maximus*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1579.

" " Evermann & Marsh, Fishes of Portorico, p. 230, fig. 65.

D. XIV, 12; A. III, 11.

Head 3. Depth $2\frac{1}{2}$. Eye $4-4\frac{1}{2}$. Snout $2\frac{1}{5}-2\frac{1}{3}$. Soft dorsal and anal pointed behind; head $1\frac{1}{2}$ in filamentous dorsal spine. Caudal lunate. Scales: top of head, preorbital, maxillary and lower jaw naked; cheek with about six rows of small scales. Opercle with about 5 rows.

Colour: light brown, little darker on back. Traces of five broad dark crossbands. A dark blotch at base of last rays of soft dorsal. Traces of dark stripes or spots on caudal fin. Base of anal a little darkened. Tips of ventrals dark.

Several specimens, 16—35 cm. from Haiti (Aux Cayes), and Curaçao (reefwater and harbour); June—August.

Nomen indig.: *okvees corra*, (corruption of „hogfish") (L.).

Habitat: West Indies, north to Bermudas.

192. *Cossyphus rufus* L.

Cossyphus bodianus, Cuvier & Valenciennes, op. cit. XIII, p. 103, 1839.

" *rufus*, Günther, Catalogue Fishes IV, p. 108.

Harpe rufa, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1583.

D. XII, 9; A. III, 12; P. 16; L. l. 34; L. tr. 6—11.

Eye $6\frac{1}{2}$. Snout $2\frac{1}{2}$. Anterior canini $\frac{4}{4}$. Posterior: 2 at both sides.

Colour: A black blotch on front part of dorsal.

Three specimens from Westpointbay, Curaçao, April; St. Eustatius; Puerto Cabello, Venezuela; and Trinidad; coll. De Weger, August. Length 11—30 cm.

Nomen indig.: *djenti katchoo* (L.) = dogteeth.

Habitat: From Florida to Rio Janeiro.

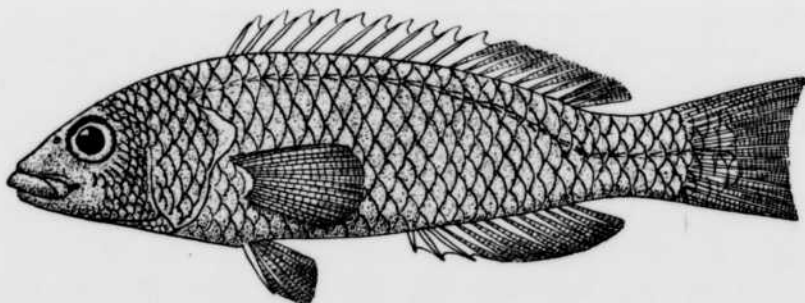
193. *Cossyphus puellaris* Poey.

Fig. 30. *Cossyphus puellaris* Poey. $\times \frac{7}{12}$.

Decodon puellaris, Günther, Catalogue Fishes IV, p. 101.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1584.

D. XI, 10; A. III, 10; L. l. 29.

Depth $4\frac{1}{4}$ in total length. Maxillary reaching pas front of orbit. Edge of praeopercle not denticulate. Whole praeopercle scaly. Length 18.5 cm.

Four specimens captured at Curaçao (Westpointbay) and at the playa of Bonaire.

Nomen indig.: *pietchie geel*, pap.: pietsjie geel („geel” = yellow).

Habitat: West Indies, north to Florida.

194. *Platyglossus radiatus* L.

Julis cyanostigma, opalina, patatus, principis, Cuvier & Valenciennes, op. cit. XIII, p. 391, 392, 398, 402.

Platyglossus radiatus, Günther, Catalogue Fishes IV, p. 163.

Iridio radiatus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1590.

D. IX, $11\frac{1}{2}$; A. III, 12; P. 12; L. l. 27—29; L. tr. ($2\frac{1}{2}$) $3\frac{1}{2}$ — $9\frac{1}{2}$ ($10\frac{1}{2}$).

Head $3\frac{3}{4}$ —4. Depth $3\frac{1}{4}$ — $3\frac{1}{5}$. Eye 5—7. Snout 2— $2\frac{1}{2}$. Anterior canini $\frac{2}{4}$. Posterior 1 (2) on each side.

Specimens from the tidal pools in the reef of Willemstad and from St. Eustatius, in the shallow water (4—10 fathoms) of the Bay. March—August.

Nomen indig.: *gutu berde*, pap.: goetoe (berde = green) (L.); *blue parrot* (W.).

195. *Platyglossus garnoti* C. V.

Julis garnoti, Cuvier & Valenciennes, op. cit. XIII, 1830, p. 390.

Platyglossus garnoti, Günther, Catalogue Fishes IV, p. 162.

Iridio garnoti, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1593.

D. IX, 10—11; A. II, 12; P. 12; L. l. 26—27; L. tr. $2\frac{1}{2}$ — $8\frac{1}{2}$ ($10\frac{1}{2}$).

Head $3\frac{2}{3}$ — $4\frac{1}{3}$. Depth $3\frac{1}{2}$ — $3\frac{2}{3}$. Eye 5—6. Snout $2\frac{1}{4}$ — $2\frac{1}{2}$.

Anterior canini $\frac{2}{4}$. Posterior 1 (2) on both sides.

Several specimens from Curaçao (Westpointbay) and Bonaire, April. Length up to 20 cm.

Vernacular name: *pietchie blauw* (i. e. blue) (L.).

Habitat: West Indies; not so very common.

196. *Platyglossus cyanocephalus* Bl.

Platyglossus internasalis, Günther, Catalogue Fishes IV, p. 164.

Iridio cyanocephalis, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1594.

D. IX, 11—12; A. III, 11—12; L. l. 25; L. tr. $2\frac{1}{2}$ — $8\frac{1}{2}$ ($10\frac{1}{2}$)

Head 4—. Depth $3\frac{1}{3}$. Eye $5\frac{1}{4}$. Snout $2\frac{1}{3}$ i. h.

Anterior canini $\frac{2}{4}$. Posterior small, 1 (2) on each side.

Two specimens from St. Martin and St. Eustatius (off. Tumbledown Dickbay); August—September. Length up to 24 cM.

Nomen indig.: *parrot fish* (W.).

Habitat: West Indies, south to Brazil.

197. *PlatyGLOSSUS maculipinna* Mull. & Trosch.

PlatyGLOSSUS maculipinna, Günther, Catalogue Fishes IV, p. 165.

Iridio maculipinna, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1594.

D. IX, 11; A. III, 11; L. l. 26.

Head 4. Depth 4. Eye $4\frac{1}{2}$. Snout 3.

Anterior canini $\frac{2}{4}$. Posterior: 1 one each side.

Two specimens from Curaçao. Length 9—12 cM.

Habitat: West Indies, north to Beaufort.

198. *PlatyGLOSSUS bivittatus* Bl.

Julis psittaculus, Cuvier & Valenciennes, op. cit. XIII, 1839, p. 387.

PlatyGLOSSUS bivittatus, Günther, Catalogue Fishes IV, p. 164.

Iridio bivittata, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1597.

D. IX, 11; A. III, 12; L. l. 26—27; L. tr. 2—8 (10).

Head $3\frac{2}{3}$ —4. Depth $3\frac{1}{2}$ — $4\frac{1}{3}$. Eye 5—6. Snout $2\frac{1}{4}$ —3.

Anterior canines $\frac{2}{4}$. Posterior: 1 on each side.

A great number of specimens, from Curaçao (Casa corantini, Piescaderabay, Waaigat, reefwater); Bonaire („Lake”, Palu leche); Aruba (canal) St. Martin (Simonsbay lagoon) and Trinidad. Length up to 15 cM.

Nomen indig.: *Pietch pompuna* (pap.: pietsj pompoena) (L.).

Habitat: very common in the West Indies, from Charleston to Brazil.

199. *PlatyGLOSSUS crotaphus* C. V.

Julis crotaphus, Cuvier & Valenciennes, l. c. XIII, 1839, p. 395, Bahia; nec *Julis crotaphus*, Cuvier, Règne Animal, p. 197.

PlatyGLOSSUS crotaphus, Günther, Catalogue Fishes IV, p. 163.

Iridio kirschii, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1598.

D. IX, 11; A. III, 12; L. l. 27; L. tr. 2—8 (9).

Head $3\frac{3}{4}$ —4. Depth $3\frac{2}{3}$ —4. Eye $5\frac{1}{3}$ — $5\frac{1}{2}$. Snout $2\frac{1}{4}$.

Anterior canini $\frac{2}{4}$. Posterior: 1 on each side. Vertical fins greenish.

Three specimens from Simonsbay lagoon, St. Martin. Length up to 17.5 cm.

Habitat: West Indies, south to Bahia.

200. *PlatyGLOSSUS elegans* Bean.

Iridio elegans, Bean, Field, Columb. Mus. Publ. Zool. VII, (2) 1906, p. 65.

Head $3\frac{5}{6}$. Depth $3\frac{1}{2}$. Eye 4. Snout 3.

One specimen from the reefs of Curaçao, of 11.5 cm., a little discoloured.

Nomen indig.: *pietch pompuna* (pap.: pietsj pompoena) (L.).

Habitat: Known only from the Bermudas.

201. *PlatyGLOSSUS microstomus* Bean.

Iridio microstomus, Bean, Field, Columb. Mus. Publ. Zool. VII, (2) 1906, p. 67.

D. IX, 11; A. III, 11; L. l. 27.

Head $3\frac{2}{5}$. Depth $3\frac{5}{6}$. Eye 3. Snout 3.

Anterior canini normal, $\frac{2}{4}$, not absolutely horizontal. Mouth not reaching eye. Pectoral reaching the 7th scale.

But for the teeth, the fish resembles in every detail the description of the type of Bean.

One specimen from Curaçao, 37 mm.

Nomen indig.: *Piesca di santu*, pap.: santoe (i.e. sand fish).

Habitat: Known only from the Bermudas.

202. *Julis nitida* Gnthr.

Julis nitida, Günther, Catalogue Fishes IV, p. 190.

Chlorichthys nitidus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1608.

D. VIII, 13; A. III, 11.

Head $3\frac{3}{4}$ ($4\frac{1}{4}$ in total). Depth 5 in total.

Colour: Dark lateral band broken up into 7 blotches, of which the anterior one forms a very well defined oval blotch on opercle with a dark margin, forming part of the broken-up streak through eye, meeting its fellow on the snout.

Several specimens from Curaçao (Cornelisbay, reefs); Bonaire and St. Eustatius. Length 87–105 mM.

Nomen indig.: *pietchie pienta* (i.e. „variegated”) (L.).

Habitat: Known from Jamaica.

203. *Julis bifasciata* Bloch.

Julis detorsor, Cuvier & Valenciennes, op. cit. XIII, p. 408.

„ *bifasciata*, Günther, Catalogue Fishes IV, p. 186.

Chlorichthys bifasciata, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1609.

D. VIII, 13; A. II, 11; L. l. 27; L. tr. 2(3)—8 (9).

Head $3\frac{1}{2}$ —4. Depth $3\frac{1}{2}$ —4. Eye $4\frac{1}{2}$ —5. Snout 3 — $3\frac{1}{2}$ i. h.

Anterior canini $\frac{2}{2}$. No posterior canini.

Several specimens from St. Martin (Simonsbay lagoon); St. Eustatius; Curaçao (reefs), and the lake of Bonaire.

Nomen indig.: *pietchie blauw* (L.).

Habitat: West Indies; not uncommon.

204. *Doratonotus boekei* nov. spec.

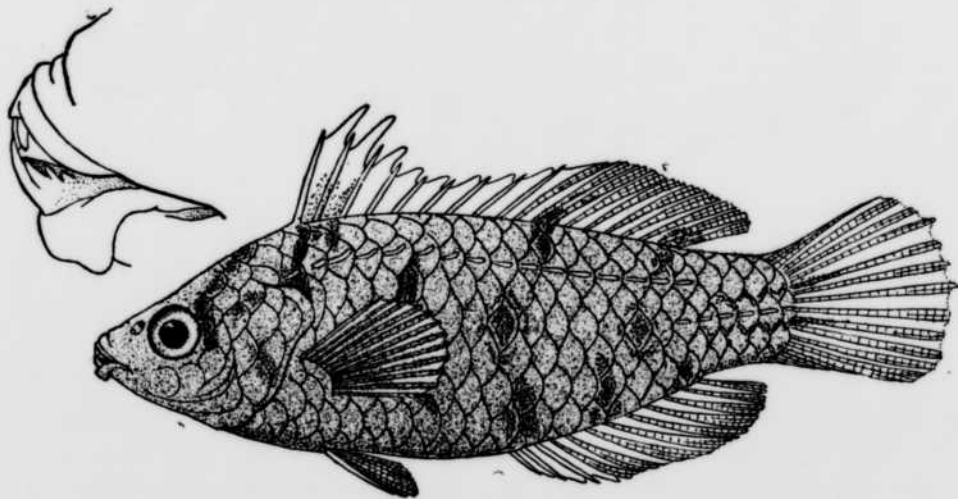


Fig. 31. *Doratonotus boekei* nov. spec. $\times 3$.

D. IX, 10; A. III, 9; L. 1. 21.

Head 3. Depth $2\frac{1}{2}$. Eye 3. Snout $2\frac{3}{5}$ i. h. Maxillary not reaching front of orbit. Teeth in one row; two pairs in the upper, one pair in lower jaw developed canine-like. No posterior canini visible. Dorsal with the 2 anterior spine-membranes filamentous. First spine highest, 2 i. h., the following shorter to the fourth, thence increasing again. Middle soft rays longest, $1\frac{1}{5}$ i. h. Third anal spine longest. Pectoral symmetrical, of 11 rays, $4\frac{1}{2}$ in body. Ventral 5, equal to depth of caudal peduncle.

Colour: olive with a greenish tinge on head. Three rows of four well defined vertical blotches on sides, spread in quincunx; those of the two superior rows being united with each other by a narrow bar. Two narrow undulating vertical maroon lines on head; one on posterior border of eye, one on lower part of opercle. A dusky stripe from eye to mouth. Chalky white markings scattered on the scales. Spines of dorsal green. Bases of soft dorsal, caudal, anal and ventrals green. Border of anal brown.

Three specimens from Curaçao (reefwater) and Bonaire. Length 38 mm. Form much as of *D. megalepis* Gnthr. but the colour is totally different, differing still more from *D. decoris* Everm. & Marsh.

Named after its discoverer, Dr. Boeke.

205. *Xyrichthys rosipes* Jord. & Gilb.

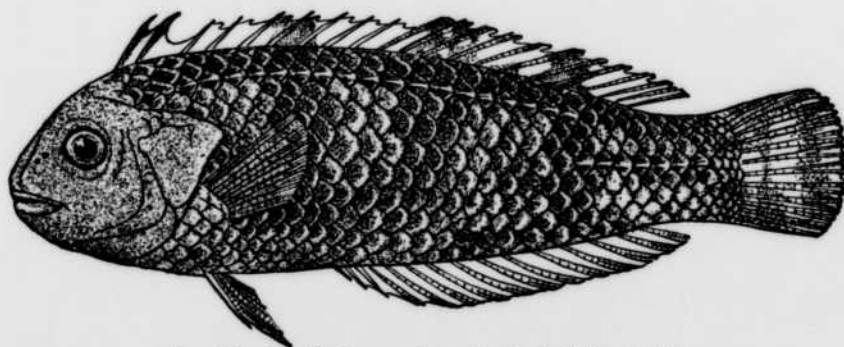


Fig. 32. *Xyrichthys rosipes*. Jord. & Gilb. $\times 1\frac{1}{2}$.

Xyrichthys rosipes, Jordan & Gilbert, Pr. U.S. Nat. Mus. 1884, p. 27, Key West.

Novaculichthys rosipes, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1614; Jordan & Thompson, Bull. Bureau Fisheries XXIV, for 1904, p. 247, Tortugas.

D. IX, 12; A. III, 12; L. 1. 24—25.

Head $3\frac{1}{2}$. Depth 3. Eye $4\frac{1}{2}$. Snout 3. Head nearly naked, a crest on snout. Two anterior dorsal spines longer and nearer to

each other than to rest of spinous dorsal, separated from it by a notch. Longest soft anal and dorsal rays $2\frac{1}{3}$ i. h. Pectoral $1\frac{3}{5}$, equal to ventral. Canini well differentiated, the lower pair fitting between the upper pair.

The lateral line ends in a scale with a branched pore, then a bare scale, and then a terminal scale with a slight crest.

Colour: No trace of a lateral blotch. Of some discoloured specimens only a blotch between two anterior dorsal spines is left.

Several specimens of from 45—70 mM. from *playa grandi*, Wacao (Curaçao).

Nomen indig.: *pietchie di hundu* (L).

Habitat: Known from Key West and Tortugas. Apparently distinct from *X. splendens* Castelnau (lateral blotch!)

206. *Xyrichthys martinicensis* C. V.

Xyrichthys martinicensis, Cuvier & Valenciennes, l. c. XIV, p. 49.

Novacula martinicensis, Günther, Catalogue Fishes IV, p. 171.

Novaculichthys martinicensis, Jordan & Evermann XXX, Fishes of N. & M. Am. II, p. 1616.

D. IX, 12; A. III, $11\frac{1}{2}$; Scales 2—28—9.

Head obtuse above with a naseous gibbosity before eyes. A few scales behind orbit. Ventrals long, reaching anal.

Colour: Uniformly plain redbrown; young with a small brown spot.

One specimen of 12 cM. from St. Eustatius.

Habitat: known from Martinique only.

207. *Xyrichthys psittacus* L.

Xyrichthys lineatus, Cuvier & Valenciennes, op. cit. XIV, 1839, p. 50.

Novacula lineata, Günther, Catalogue Fishes IV, p. 171.

Xyrichthys psittacus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1618.

D. IX, 12; A. III, 11; L. 1. 27.

Colour: front of head violet; blue vertical streaks on head alternating with yellow ones. Yellow spots in the throat region; area behind pectoral blood-red. Sides of body of a reddish violet. Yellow cross-streaks on tail. A red margin to vertical fins. Belly lines evident.

Several specimens from St. Eustatius, off Tumbledown Dick bay, August. Length up to 10 cM.

Nomen indig.: *Djenti katchoo* (i. e. dogteeth) (L.).

Habitat: from Charleston to Bahia.

208. *Xyrichthys modestus* Poey.

Xyrichthys modestus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1619.

D. IX, 12; A. III, 13; Scales 2—27—10 (8 to anal fin).

Eye $4\frac{1}{2}$. Head very sharp.

Colour: A silvery blotch behind pectoral, but no trace of stripes under it.

One specimen, probably from St. Eustatius.

Habitat: Known from Cuba.

With Poey we consider it as a distinct species, apart from *X. psittacus*, and approaching *X. novacula* L. = *X. cultratus* C. V.

SCARIDAE.

209. *Cryptotomus roseus* Cope.

Cryptotomus roseus, Cope, Tr. Am. Phil. Soc. XIII, 1871, p. 462; St. Martin.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1626.

D. IX, 9; A. III, 8; L. l. 24—25; L. tr. 2—6.

Head $3\frac{1}{2}$. Depth $4\frac{1}{5}$. Eye 4. Snout $2\frac{1}{2}$ i. h.

Captured at St. Eustatius; length 10 cM.

Habitat: Known from St. Martin and Bahia.

210. *Cryptotomus beryllinus* Jord. & Swain.

Cryptotomus beryllinus, Jordan & Swain, Pr. U. S. Nat. Mus. 1884, p. 101, Havana.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1625.

D. IX, 10; A. III, 9; L. l. 23—24.

Head 3. Depth 4. Eye $4\frac{1}{2}$. Snout $3\frac{1}{3}$ i. h. No posterior canini.

Colour: bleached; a silvery streak below eye; one white lateral stripe visible.

Two specimens of 4.5—6 cM. from St. Eustatius.

Nomen indig.: *round-head sill*. (W.)

Habitat: From Florida to Rio Janeiro.

211. *Sparisoma xystrodon* Jord. & Swain.

Sparisoma xystrodon, Jordan & Swain, Proc. U. S. Nat. Mus.
1884, p. 99.

" " Jordan & Evermann, Fishes of N. & M.
Am. II, p. 1630.

" " Evermann & Marsh, Fishes of Portorico,
p. 236.

Easily recognisable by the many canini in upper jaw.

A dozen specimens from Curaçao (Wacao, Waaigat); Bonaire
and St. Eustatius. Length up to 12 cm.

Nomen indig.: *Gutu baricageel*, pap.: gœtœ (L.); (barica = belly).

Habitat: West Indies, north to Florida.

212. *Sparisoma radians* C. V.

Scarus radians, Cuvier & Valenciennes, op. cit. XIV, 1839,
p. 206; Brazil.

Sparisoma radians, Jordan & Evermann, Fishes of N. & M.
Am. II, p. 1631.

D. IX, 10; A. II, 9; L. l. 25; L. tr. $2\frac{1}{2}$ —6.

Head $3\frac{1}{2}$. Depth $2\frac{2}{3}$. Eye 5. Snout 2 i. h.

One specimen from St. Martin. Length 17 cm.

Habitat: West Indies, south to Brazil, also from West Africa
(Osorio).

213. *Sparisoma haplomystax* Cope.

Scarus haplomystax, Cope, Tr. Phil. Soc. 1871, p. 462.

Sparisoma haplomystax, Jordan & Evermann, Fishes of N. & M.
Am. II, p. 1632, fig. 611.

" " Evermann & Marsh, Fishes of Porto-
rico, p. 237, fig. 67.

Three typical specimens agree exactly with the description of
Cope and the figure of Jordan & Evermann, the others are more or
less aberrant from it. The brown dotting may be a constant charac-
ter, so may be the two pairs of lateral canini, but of the preserved
material the decision between *S. haplomystax* and *S. flavescens* is
often a difficult one; probably the former is simply the young of
the latter.

Captured at Curaçao (Wacao); Aruba lagoon, between the algae.
Not exceeding 7.5 cm.

Habitat: From Florida to Bahia.

214. *Sparisoma aurofrenatum* C. V.

Scarus aurofrenatus, Cuvier & Valenciennes, op. cit. XIV,
p. 191, 1839.

" " Günther, Catalogue Fishes IV, p. 212.

Sparisoma aurofrenatum, Jordan & Evermann, Fishes of N. & M.
Am. II, p. 1634.

" " Evermann & Marsh, Fishes of Portorico,
p. 238.

D. IX, 10; A. II, 9; L. l. 24; L. tr. 3—6.

Head $3\frac{1}{2}$. Depth $2\frac{5}{6}$ —3. Eye $4\frac{1}{5}$ — $4\frac{1}{2}$. Snout $2\frac{1}{4}$ — $2\frac{1}{2}$. Lateral
canini: 2 on left side, 1—2 on right side in upper jaw; one pair
of median canini.

Specimens from the playa grandi of Wacao (Curaçao), and from
St. Eustatius. Length 15—21 cm.

Nomen indig.: *Gutu kétékété*, pap. goetoe (L.) red parrot fish (W.).

Habitat: Common in the West Indies.

215. *Sparisoma abildgaardi* Bl.

Scarus abildgaardi, Cuvier & Valenciennes, op. cit. XIV,
p. 175, 1839.

" " Günther, Catalogue Fishes IV, p. 209.

Sparisoma abildgaardi, Jordan & Evermann, Fishes of N. & M.
Am. II, p. 1635.

" " Evermann & Marsh, Fishes of Portorico,
p. 239, pl. 30.

D. IX, 10; A. II, 9; L. l. 24; L. tr. 3—6.

Head $3\frac{1}{6}$ — $3\frac{1}{2}$. Depth $2\frac{1}{2}$ — $2\frac{2}{3}$. Eye $4\frac{1}{2}$ — $4\frac{2}{3}$. Snout 2— $2\frac{1}{8}$.
Lateral canini: 1 (2) on each side. Very characteristic is the netlike
design on body, formed by the black edges of the scales.

Four specimens, from Curaçao (reefs, Schottegat), and Venezuela,
(coll. De Weger). Length 15—39 cm. the largest of Scarids of the
collection. March—September.

Nomen indig.: *gutú corra*; *gutú rabugaai* (i. e. cock-tail) (L.).

Habitat: West Indies, south to Brazil.

216. *Sparisoma distinctum* Poey.

Sparisoma distinctum, Jordan, Review Labroid Fishes, p. 676.

" " Jordan & Evermann, Fishes of N. & M.
Am. II, p. 1635.

Head $3\frac{1}{2}$. Depth $2\frac{2}{3}$. Eye 4. Snout $2\frac{1}{3}$. L. l. 23. L. tr. $2\frac{1}{2}$ —6.
Lateral canini: 0—1.

Colour: A characteristic white saddle on back of caudal peduncle evident in all specimens.

Several specimens from Curaçao (reefwater, harbour), and Bonaire. March—July.

Nomen indig.: *Gutu* (pap.: goetoe) *rooibekkie* (i. e. with a red mouth).

Habitat: West Indies, south to Bahia.

217. *Sparisoma chrysopterus* Bl. Schn.

Scarus chrysopterus, Cuvier & Valenciennes, op. cit. XIV, 1839, p. 185.

" " Günther, Catalogue Fishes IV, p. 211.

Sparisoma chrysopterus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1636.

" " Evermann & Marsh, Fishes of Portorico, p. 239.

D. IX, 10; A. II, 9; L. l. 25; L. tr. $2\frac{1}{2}$ —6.

Head $3\frac{1}{2}$. Depth 3. Eye 5. Snout 2. 2—4 lateral canini. Teeth of a pale green.

Captured at St. Eustatius, leeward side. Length 32.5 cM.

Nomen indig.: *blue parrot fish* (W.).

Habitat: West Indies, south to Bahia.

218. *Sparisoma viride* Bonaterre.

Scarus catesboei, Cuvier & Valenciennes, op. cit. XIV, p. 183, 1839.

" " Günther, Catalogue Fishes IV, p. 210.

Sparisoma viride, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1638.

" " Evermann & Marsh, Fishes of Portorico, p. 240.

Depth 3 in total. Upper caudal rays $1\frac{2}{3}$ times the inner rays.
 Colour: A yellow spot on opercular lobe and a smaller black one below it.

One specimen from Haiti, coll. De Weger; 22.5 cM.

Habitat: common in the West Indies.

219. *Sparisoma flavescens* Bl. Schn.

Callyodon flavescens, Cuvier & Valenciennes, op. cit. XIV, p. 288, 1839.

Scarus squalidus, Günther, Catalogue Fishes IV, p. 212.

Sparisoma flavescens, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1639.

" " Evermann & Marsh, Fishes of Portorico, p. 240.

D. IX, 10; A. II, 9; L. l. 24; L. tr. $2\frac{1}{2}$ (3)—6.

Head $3\frac{2}{3}$ —4. Depth $2\frac{3}{4}$ — $3\frac{1}{3}$. Eye $3\frac{2}{3}$ — $4\frac{1}{2}$. Snout $2\frac{1}{6}$ — $2\frac{1}{2}$.

No lateral canini in the adult, but 8 juv. from different localities show lateral canini. Besides these we have in our Museum 4 specimens from St. Croix, received from Prof. Eigenmann, one of which (8.5 cM.) has also the lateral canini, which will probably fall out in the adolescent. Ergo their presence-absence is not a good diagnostic character. Some of these juv. show the typical specific coloration of *S. flavescens*, others approach more or less that of *S. haplomystax*, which would be another argument in favour of the unity of these species, only provisionally separated here. Outer rays of caudal exerted in the adults.

Colour: axillary spot very variable.

A large number captured at Curaçao (Schottegat, Wacao, reefs, harbour, Cornelisbay); Bonaire (Lake, Kralendyk); Aruba; St. Martin and St. Eustatius (harbour). Length up to 22.5 cM.

Nomen indig: *Gutu blanco* (pap.: goetoe) (L.).

Habitat: From Florida to Rio Janeiro; West Africa; the most common of the genus.

220. *Sparisoma brachiale* Poey.

Sparisoma brachiale, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1641.

" " Evermann & Marsh, Fishes of Portorico, p. 242.

D. IX, 10; A. II, 9; L. l. 24; L. tr. $2\frac{1}{2}$ — $6\frac{1}{2}$.

Head $3\frac{1}{5}$ (4 in total). Depth $2\frac{4}{5}$ ($3\frac{3}{7}$ in total). Eye 5+. Snout 2.
No lateral canini.

One specimen of 33 cM. from Curaçao.

Habitat: known from Cuba, Jamaica, Portorico.

221. *Scarus punctulatus* C. V.

Scarus punctulatus, Cuvier & Valenciennes, op. cit. XIV, 1839, p. 195.

Pseudoscarus taeniopterus, Günther, Catalogue Fishes IV, p. 226.

Scarus diadema, Cope, Trans. Am. Phil. Soc. 1871, p. 461; St. Martin.

„ *punctulatus*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1645.

D. IX, 10; A. II, 9; Scales $2\frac{1}{2}$ —23(25)—6.

Head $3\frac{1}{2}$ —4. Depth $3\frac{2}{3}$. Eye $4\frac{1}{2}$ —5. Snout $2\frac{1}{2}$ — $2\frac{2}{3}$. Lateral canini 1—2 on each side.

Several specimens from Curaçao (reefs) and Puerto Cabello. Venezuela: June—August. Length up to 21 cM.

Nomen indig.: *goetoe blauw* (i. e. blue-gutu) (L.).

Habitat: common in the West Indies.

222. *Scarus taeniopterus* Desm.

Scarus taeniopterus, Cuvier & Valenciennes, l. c. XIV, 1839, p. 195.

Pseudoscarus psittacus, Günther, Catalogue Fishes IV, p. 225.

Scarus psittacus, Cope, Tr. Am. Philos. Soc. 1871, p. 461, St. Martin.

„ *taeniopterus*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1646.

D. IX, 10; A. II, 9; L. l. 24; L. tr. $2\frac{1}{2}$ —6.

Head 3 ($3\frac{3}{4}$ in total). Depth $3\frac{1}{2}$ in total. Eye $5\frac{1}{3}$. Snout $2\frac{1}{2}$.
No canini.

One specimen from Bonaire: 24 cM.

Habitat: West Indies.

223. *Scarus vetula* Bl. Schn.

Scarus vetula, Cuvier & Valenciennes, op. cit. XIV, 1839, p. 193.

Pseudoscarus superbus, Günther, Catalogue Fishes IV, p. 218.

Scarus vetula, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1649.

Head $3\frac{1}{6}$. Depth $3\frac{1}{6}$. Eye 7. Snout $2\frac{1}{5}$. Canini 2 + 3.

Colour: Conspicuous sulphur bands from mouth to lower border of eye and across tip of snout.

One specimen from St. Eustatius, leeward side; 34 cM.

Nomen indig.: *parrot fish* (W.).

Habitat: West Indies.

224. *Scarus croicensis* Bloch.

Scarus alternans, Cuvier & Valenciennes XVI, 1839, p. 200.

Pseudoscarus santaecrucis, Günther, Catalogue Fishes IV, p. 226.

Scarus croicensis, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1650.

Head $3\frac{1}{3}$ — $3\frac{2}{3}$. Depth $3\frac{1}{3}$. Eye 5— $5\frac{1}{2}$. Snout $2\frac{1}{3}$ — $2\frac{1}{2}$. 1 (0) lateral canini. 2—3 scales in the third cheek-row.

Several specimens from Curaçao (Reefs, Piescaderabay, Cornelisbay), Bonaire, lac; playa and lagoon of Aruba. Also from St. Eustatius (20—50 fathoms) Venezuela and Trinidad (coll. De Weger). Length: up to 25 cM. March—September.

Nomen indig.: *gutu pietch*, *gutu garnaaltje* (L.), *coccobelly* (W.).

Habitat: West Indies, north to Florida.

225. *Scarus evermanni* Jordan.

Scarus evermanni, Jordan, Pr. U. S. Nat. Mus. 1886, p. 469.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1651.

Head 4. Depth $3\frac{1}{2}$ in total. Eye small, 5 in head. Snout $3\frac{2}{5}$. $2\frac{1}{2}$ rows of scales on cheek. Two small, blunt canini on one side, 3 on the other one. Teeth sordid-white. Last rays of dorsal reaching farther backward than anal. Caudal obliquely truncate. Pectoral of 13 rays, $5\frac{2}{3}$ in total. Ventral 2— in head.

Colour: Very dark brown. A pale horizontal streak on level of eye raised a little on head and meeting its fellow before eyes; two dark belly stripes on each side. Dorsal and caudal chiefly green, anal brown. No blotch to be seen on caudal peduncle.

Certainly distinct from *S. croicensis*.

One specimen of 20 cM. from Venezuela, coll. De Weger.

Habitat: known only from the Mexican Gulf.

N.B. *Pseudoscarus acaranga* Günther may have been a discoloured specimen of this species. As already stated the canine teeth provide no trustworthy diagnostic, as appeared to us, having examined more than a hundred scarids. No species of Scaridae should ever be established upon a single or a few specimens, especially not upon young ones.

226. *Scarus coeruleus* Bl.

Scarus coeruleus, Cuvier & Valenciennes, op. cit. XIV, 1839, p. 186.

Pseudoscarus coeruleus, Günther, Catalogue Fishes IV, p. 227.

Scarus coeruleus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1652.

Head 4. Depth $3\frac{1}{2}$ in total. Eye $4\frac{1}{2}$ —5. Snout $2\frac{1}{2}$. No canini. Several specimens from Curaçao (reefs, Piescaderabay, Asientobay); St. Eustatius. Length up to 19 cm.

Nomen indig.: *gutu blanc*; *gutu kedebe* (L.) (*blue parrot* W.).

Habitat: West Indies, north to Maryland.

227. *Pseudoscarus guacamaia* Cuv.

Scarus guacamaia, Cuvier & Valenciennes, op. cit. XIV, 1839, p. 178.

Pseudoscarus guacamaia, Günther, Catalogue Fishes IV, p. 233.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1657.

Head $3\frac{1}{4}$ — $3\frac{2}{3}$. Depth $2\frac{2}{3}$ — $3\frac{1}{3}$. Eye 5. Snout $2\frac{1}{2}$ — $2\frac{3}{4}$. No canini.

Four of the eleven specimens from Curaçao have a much darker hue and more pronounced markings on head. Several specimens captured at Curaçao (reefs, Schottegat, Piescaderabay); Bonaire, Lac; Pargobank of Aruba; St. Eustatius, and Simonsbay lagoon, St. Martin. Length up to 22.5 cm.

Nomen vulgare: *Gutu* (pap.: goetoe) *pretu* (i. e. black); *green parrot fish* (W.).

Habitat: From Florida to Rio Janeiro, West Africa.

Gutu's are used as food fish at Curaçao, though not regularly.

CARANGIDAE.

228. *Chlorinemus saurus* Bl. Schn.

Chlorinemus occidentalis, Günther, Catalogue Fishes II, p. 475.

" *quichra*, Cuvier & Valenciennes, op. cit. VIII, p. 396, 1831.

" *saltans*, Cuvier & Valenciennes, op. cit. VIII, p. 393, 1831.

" *inornatus*, Günther, Fishes Centr. Am., 1869, p. 433 (Pacific).

Oligoplites saurus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 898.

D. V. I, 20; A. 11, I, 20.

Head $4\frac{1}{2}$. Depth $3\frac{1}{3}$. Maxillary not reaching posterior border of eye.

Colour: blue of head with a purplish hue.

Several specimens from Curaçao (reefs, Piescaderabay, Schottegat) and Trinidad. Length up to 26 cM. Probably also at St. Eustatius.

Nomen indig.: *Udiuw* (i. e. jew) (L.); *leather jack* (W.).

Habitat: On both coasts of Central America.

229. *Caranx (Decapterus) punctatus* Agass.

Caranx punctatus, Cuvier & Valenciennes, op. cit. IX, 1833, p. 38.

" " Günther, Catalogue Fishes II, p. 426

Decapterus punctatus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 907.

" " Evermann & Marsh, Fishes of Portorico, p. 129, pl. 8.

D. VIII, I, 30—32, I; A. II, I, 25—27, I. \pm 40—42 scutes in straight part of L. l.

Head 4. Depth $4\frac{2}{5}$ — $4\frac{2}{3}$ in length to root of upper caudal rays. Eye nearly equal to snout. No teeth visible or a few teeth, very minute, may be present in jaws (in more than one row), palatines and vomer. Teeth most persistent on vomer. Lateral line distinctly bent.

Colour: Opercular spot distinct, often very small. Axil dusky.

Several specimens from Curaçao (reefs); Bonaire, and St. Eustatius, all young, up to 12.5 cM.

Nomen indig.: *Maulo* (L.): *scad*, *round robin*, (*jack*), (W.).

Habitat: from Cape Cod to Brazil; also at the African Coast.

230. *Caranx (Decapterus) sanctae helenae* C. V.

Caranx sanctae helenae, Cuvier & Valenciennes, op. cit. IX, 1833, p. 37; St. Helena.

Decapterus sanctae helenae, Poey, Synopsis, p. 368.

Caranx jacobaeus, Cuvier & Valenciennes, l. c. IX, 1833, p. 42; (Cape verd.).

Caranx sanctae helenae, Cunningham, P. Z. S., 1910, p. 102.

Decapterus sanctae helenae, Jordan & Evermann, op cit. I, p. 908.

D. VIII, I, 34, I; A. II, I, 27—29, I; L. 1. + 30 keeled scutes.

Head 4. Depth 5+ in length to root of upper caudal rays. Eye

$1\frac{1}{3}$ in snout. Pectoral $1\frac{2}{3}$ i. h.

Colour: opercular spot distinct; axil dusky.

Two specimens, from the harbour of Willemstad, Curaçao, and from Bonaire, of 12.5 cm.

Nomen indig.: *Maulo* (L.).

Habitat: Apparently throughout the Atlantic.

The synonymy of *Caranx sanctae helenae* and *C. jacobaeus* was suggested for the first time by Cunningham, Proc. Zool. Society, 1910, p. 102. Unfortunately he gives no sufficient details about his specimens from St. Helena. *Caranx jacobaeus* is a well-known species from the west coasts of Africa (see second part of this paper). Unhappily the only specimen we possess from there is too large for direct comparison with its american confraters. The synonymy with the japanese *C. maruadsi* Temminck & Schlegel, though supposed by Günther and Steindachner, is highly improbable, as appears from the original description. At all events at Curaçao there seem to exist at least 3 species of the subgenus *Decapterus*, viz. the „Maulo's" and the „steenmarsbangoe", of which we have got no material, probably *C. macarellus* C. V.

231. **Caranx (Trachurops) crumenophthalmus** Bl.

Caranx crumenophthalmus, Cuvier & Valenciennes, op. cit. IX,
1833, p. 62.

" " Günther, Catalogue Fishes II, p.429.

Trachurops crumenophthalmus, Jordan & Evermann, Fishes of
N. & M. Am. I, p. 911.

" " Evermann & Marsh, Fishes of Por-
torico, p. 129, fig. 30.

D. VIII, I, 25; A. II, I, 22—23.

Several specimens of this easily recognisable fish collected at
Curaçao (harbour), St. Martin and St. Eustatius. Also obtained
from La Guayara, Venezuela (coll. De Weger). Length up to 24 cm.

Nomen indig.: *marzbango*, *cabeliao* (Dutch: marsbanker,
kabeljauw).

Habitat: Tropical seas, Atlantic and Indopacific.

N.B. One of the most important marketfishes of Curaçao.

232. *Caranx amblyrhynchus* C. V.

Caranx amblyrhynchus, Cuvier & Valenciennes, l. c. IX,
p. 100; pl. 248, 1833.

" " Günther, Catalogue Fishes II, p. 441.

Hemicaranx amblyrhynchus, Jordan & Evermann, Fishes of
N. & M. Am. I, p. 912.

D. VII, I, 27; A. II, I, 23; Scutes 50.

Head 4. Depth $2\frac{1}{3}$ in length to base of caudal fin. Eye longer
than snout, 3. Pectoral 3- in length.

Colour: base of pectoral jet-black.

One specimen from Trinidad, coll. De Weger; length 26 cm.

Habitat: from Florida to Brazil.

233. *Caranx ruber* Bloch.

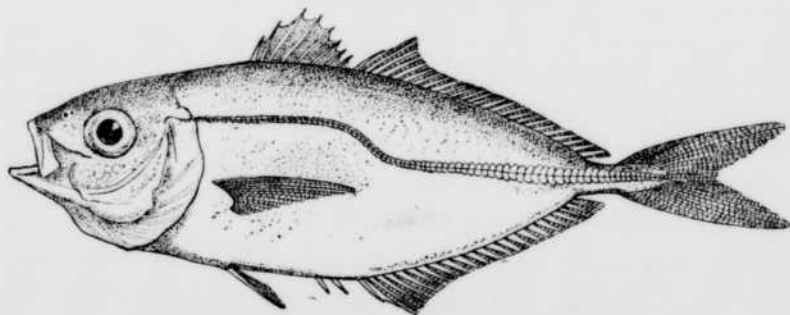


Fig. 33. *Caranx ruber* Bloch, juv. nat. size.

Caranx ruber, Günther, Catalogue Fishes II, p. 430.

" *blochii*, Cuvier & Valenciennes, l. c. IX, 1833; p. 69.

Caranx ruber, Jordan & Evermann, Fishes of N. & M. Am. I, p. 919.

D. VIII, I, 26—29; A. II, I, 23—26; Scutes 34—37.

Head $3\frac{1}{3}$ — $3\frac{1}{2}$. Depth $2\frac{4}{7}$ —3. Straight part of lateral line $2\frac{1}{5}$ — $2\frac{2}{5}$ in body. Straight part $1\frac{1}{3}$ — $1\frac{2}{3}$ in curved part.

Colour: caudal fin black; of one specimen a golden hue is recorded.

Several young specimens from St. Eustatius and Curaçao.

Nomen indig.: *jager* (L.); (dutch: = hunter); *greenback* *cavalry* (W.).

Habitat: West Indies; not very common.

234. *Caranx bartholomaei* C. V.

Caranx bartholomaei, Cuvier & Valenciennes, op. cit. IX, 1833, p. 100.

" " Jordan & Evermann, Fishes of N. & M. Am. I, p. 919.

" " Evermann & Marsh, Fishes of Portorico, p. 131.

D. VIII, I, 26—29; A. II, I, 22—23; Scutes 24—28.

Head $2\frac{6}{7}$. Depth 3— in length to base of caudal. Eye 4. Maxillary $2\frac{4}{7}$ — $2\frac{3}{4}$. Pectoral $2\frac{3}{4}$ — $2\frac{4}{5}$ in length. Pectoral + straight part of lateral line equal to head. Longest dorsal ray $2\frac{1}{4}$ — $2\frac{4}{5}$ i. h.

Specimens from St. Eustatius (shallow water) and Haiti, coll. De Weger. Length 27—28 cm.

Nomen indig.: *cavalry* (W.).

Habitat: West Indies, north to Florida.

235. *Caranx chrysos* Mitch.

Caranx chrysos, Günther, Catalogue Fishes II, p. 445.

" *caballus*, Günther, Fishes Central America, 1863, p. 431.

" *chrysos*, Jordan & Evermann, Fishes of N. & M. Am. I, p. 921.

" *caballus*, Jordan & Evermann, Fishes of N. & M. Am. I, p. 921.

" *chrysos*, Evermann & Marsh, Fishes of Portorico, p. 132, fig. 32.

D. VIII, I, 23—24; A. II, I, 18—20; Lateral scutes 48—43.

Head $3\frac{1}{2}$ — $3\frac{3}{5}$. Depth 3. Eye $3\frac{1}{3}$. Maxillary 3-. 26 gillrakers on lower arch. Curved part of lateral line 2- in straight part. Vertical fins falcate. Pectoral 4.

Colour: No cross bars.

Three specimens, from Curaçao, St. Eustatius (shallow water), and Haiti (Jeremie). Length up to 27 cm. In some points they approach more the description of *C. crysos*, in others those of *C. caballus*, which I believe to be synonyms.

Nomen indig.: *jager boca bau* (L.); *runner, deepwater-cavalry* (W.); a foodfish of some importance.

Habitat: Both coasts of America; West African coasts.

236. *Caranx hippos* L.

Caranx lepturus, Günther, Catalogue Fishes II, p. 447.

" *fallax*, Cuvier & Valenciennes, op. cit. IX, 1833, p. 95.

" *hippos*, Günther, Catalogue Fishes II, p. 449.

" *latus*, Jordan & Evermann, Fishes of N. & M. Am. I, p. 923.

" " Evermann & Marsh, Fishes of Portorico, p. 132, fig. 33.

D. VIII, I, 21; A. II, I, 17; Lateral scutes 35.

Head $3\frac{2}{5}$. Depth $2\frac{3}{5}$ (3 in total) in a specimen of 24 cm., the young being much higher ($2\frac{2}{7}$ in juv. of 45—72 mm.). Curved part of lateral line variable in form, $1\frac{2}{5}$ — $1\frac{3}{5}$ in straight part. Brest always scaled.

Colour: opercular spot absent in young, in adolescent represented by a shade. Young usually crossbanded; they show a number of individual characteristics, such as a black tail, black saddle on caudal peduncle, dusky axillary area, which they have in common with *C. carangus* Bloch. However the presence of scales in the brest-region (absent in Indian specimens of *C. carangus* of the same length, where the opercular spot is often wanting) distinguishes them sure enough from the latter species.

A number of specimens from Curaçao (harbour, Schottegat); Bonaire (playa), and St. Eustatius. Length, according to Dr. Boeke, up to 1 M. One with a *Cymothoa oestrum* L. on tongue.

Nomen indig.: *corcoba blanco* (L.), *horse-eye cavalry* (W.). A foodfish of some importance at Curaçao in autumn.

Habitat: Tropical seas.

237. *Selene setipinnis* Mitch.

Vomer browni, Cuvier & Valenciennes, op. cit. IX, p. 189, pl. 256.

Argyreosus setipinnis, Günther, Catalogue Fishes II, p. 459.

Vomer setipinnis, Jordan & Evermann, Fishes of N. & M. Am. I, p. 934 — (see also second part of this paper).

D. VIII, I, 21; A. II, I, 18.

Depth 2 in length to furcation of tail.

One specimen from the coast of Venezuela, coll. De Weger. of 19 cM.

Habitat: Both sides of tropical Atlantic; American Pacific.

238. *Selene vomer* L.

Selene vomer, Cuvier & Valenciennes, op. cit. IX, p. 177; Günther, Catalogue Fishes II, p. 458.

" " Jordan & Evermann, Fishes of N. & M. Am. I, p. 936.

" " Evermann & Marsh, Fishes of Portorico, p. 135, fig. 34—35.

D. X, I, 22; A. II, I, 18.

Some fine specimens from Curaçao and Trinidad, the largest being 39 cM.

Nomen indig.: *Cara di cabai* (i.e. horse-head), corrupted to „*caricabai*” (L.).

Habitat: Both coasts of tropical America; also recorded from Fernando Po (Aequ. Africa), by Osorio (see second part).

239. *Micropteryx chrysurus* L.

Seriola cosmopolita, Cuvier & Valenciennes, op. cit. IX, p. 219, pl. 256.

Micropteryx chrysurus, Günther, Catalogue Fishes II, p. 460.

Chloroscombrus chrysurus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 938.

" " Evermann & Marsh, Fishes of Portorico, p. 136, fig. 36.

Chloroscombrus ectenurus, Jordan & Osgood, Proc. Ac. Nat. Sc. Philad. 1897, p. 101; Jamaica.

D. VIII, I, 26—27; A. II, I, 26—27.

Head ($3\frac{3}{4}$ —) 4 ($-4\frac{3}{5}$). Depth 2^{+} — $2\frac{2}{3}$. Eye 3 — $3\frac{1}{2}$. Snout 4.

Lateral line strongly curved, the curved part as long as the head, $1\frac{3}{5}$ — $1\frac{3}{4}$ in the straight part. Caudal peduncle very narrow, much longer than deep. Dorsal and anal about equal in length. Pectoral long, falcate, 3 — $3\frac{1}{2}$ in length; ventral small, 2 — $2\frac{2}{3}$ i. h. Caudal widely forked.

Colour: dark above, sides and belly silvery; fins pale. Dark opercular and axillary spots inside of mouth. Dorsal and anal fin with a narrow black edge. A black spot on upper part of caudal peduncle.

Several specimens from Curaçao (Schottegat), and from Trinidad, Port of Spain; August (coll. De Weger).

All these specimens are not distinguishable from African ones, which show the same large variability in depth as the Americans. *Chl. ectenurus* of Jordan & Osgood is simply one of these individual modifications. The same is the case with the width of the black dorsal-margin. Length 14—32 cm.

Nomen indig.: *Casambitu* (L.).

Habitat: Both sides of tropical Atlantic, on the American side from Cape Cod to Brazil.

240. *Trachinotus glaucus* Bloch.

Trachinotus glaucus, Cuvier & Valenciennes, op. cit. IX, p. 400.

" " Günther, Catalogue Fishes II, p. 483.

" " Jordan & Evermann, Fishes of N. & M. Am. I, p. 940.

" " Evermann & Marsh, Fishes of Portorico, p. 137, fig. 37.

D. VII, I, 19—20; A. II, I, 17—18.

Head $3\frac{1}{2}$. Depth 2. Eye 4. Maxillary $2\frac{4}{5}$. Jaws with small teeth in young. Profile evenly convex from supraorbital up to dorsal fin. Anterior rays of dorsal and anal falcate, reaching beyond middle of caudal in adult. Dorsal spines VII (the small anterior one is often overlooked), connected by membrane in young. Caudal very deeply forked (its lobes equal to depth in young), half the length of body in adult. Pectoral small, $1\frac{1}{5}$. Ventrals minute, $2\frac{1}{3}$.

Colour: pale below; sides crossed by three distinct dark vertical bands; a fourth is to be seen, reduced to a spot; lobes of vertifins very dark; other fins pale.

Several specimens from Curaçao (Wacao); St. Eustatius (harbour), and Haiti (Jeremie), the last of coll. De Weger. Measuring up to 31 cM. April—August.

Nomen indig.: *pampano*, corrupted to „*pamper*” (L.); *cobbler*, (W.). Sometimes seen in the market.

Habitat: West Indies, north to Virginia.

241. *Trachinotus rhomboides* Bloch.

Trachinotus rhomboides, Cuvier & Valenciennes, op. cit. VIII, p. 407, 1831, Martinique.

„ *fuscus*, Cuvier & Valenciennes, l. c. VIII, p. 410, 1831, Brazil (juv.).

„ *rhomboides*, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2847.

„ *falcatus*, Evermann & Marsh, Fishes of Portorico, p. 138; fig. 38 (juv.).

D. VI, I, 19; A. II, I, 17.

Head $3\frac{2}{5}$. Depth $1\frac{2}{5}$. Eye 3. Maxillary reaching front of pupil, $3\frac{1}{5}$ i. h. Dorsal lobe $2\frac{2}{7}$, reaching opposite base of caudal; caudal lobes 2^{+} in length; pectoral $1\frac{2}{7}$ i. h.; ventral $2\frac{1}{3}$.

One specimen from Curaçao, reefwater, May; 17 cM.

Habitat: West Indies, often confounded with *Trachinotus ovatus* (see second part of this paper).

242. *Temnodon saltator* L.

Temnodon saltator, Cuvier & Valenciennes, op. cit. IX, 1833, p. 225; Günther, Catalogue Fishes II, p. 479.

Sparactodon nahnal, De Rochebrune, Actes Soc. Linn., Bordeaux, Vol. XXXVI (Serie 4), VI, 1882, p. 103.

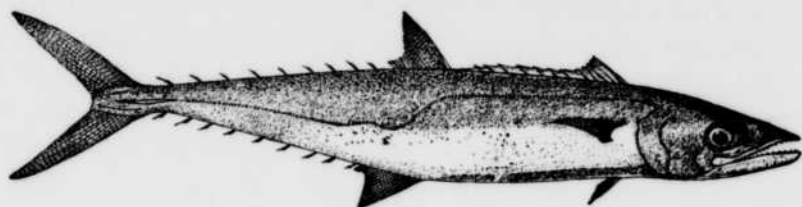
Pomatomus saltatrix, Jordan & Evermann, Fishes of N. & M. Am. I, p. 946.

Linea lateralis 92.

One specimen collected by Mr. De Weger at Carupano, Venezuela. The name *Pomatomus* of Lacepède is generally used for a genus of Serranids (*Pomatomus telescopium* Risso 1810).

Habitat: cosmopolitic.

SCOMBRIDAE.

243. *Cybium cavalla* Cuvier.Fig. 34. *Cybium cavalla*, Cuv. $\times \frac{1}{6}$.

Cybium caballa, Cuvier & Valenciennes, op. cit. VIII, 1831, p. 187.

" *immaculatum*, Cuvier & Valenciennes, op. cit. VIII, 1831, p. 191.

" *caballa*, Günther, Catalogue Fishes II, p. 373.

Scomberomorus cavalla, Jordan & Evermann, Fishes of N. & M. Am. I, p. 875.

D. XIV, I, 15, VIII; A. II, 15, VIII.

Depth 6. Eye $2\frac{1}{3}$ in snout. Mouth large, maxillary reaching posterior margin of pupil. 31 teeth in lower jaw, 40 in upper jaw. A peculiar *lingual tooth* on both sides. 8 gillrakers on both sides. Colour: irongray, shading off to silvery on the sides.

One specimen from the canal of Aruba, July, of 60 cM.; also caught at the Windward Islands; not so common here as *C. regale*.

Nomen indig.: *konnevees* (from dutch: koningsvisch, i. e. kingfish).

Habitat: Tropical Atlantic.

244. *Cybium regale* Bl.

Cybium regale, Günther, Catalogue Fishes II, p. 372.

" " Cuvier & Valenciennes, op. cit. VIII, p. 184.

" *acervum*, Cuvier & Valenciennes, op. cit. VIII, p. 186.

Scomberomorus regalis, Jordan & Evermann, Fishes of N. & M. Am. I, p. 875.

" " Evermann & Marsh, Fishes of Portorico, p. 124, fig. 28.

D. XVII, I, 16, VIII; A. II, 16, VIII.

Head $3\frac{2}{3}$ — $4\frac{1}{5}$. Depth $4\frac{1}{4}$ — $4\frac{3}{4}$ in length to origin of caudal. Eye 4. Maxillary $1\frac{4}{5}$, reaching posterior border of pupil. Teeth 11—15 in upper, 11 in lower jaw; 12 gillrakers on lower arch. Soft dorsal inserted over or a little in advance of anal. Ventral $3\frac{3}{4}$.

Colour: the largest specimen with traces of the lateral streaks; the smaller ones immaculate. These latter juv. differ from the former in having the upper part of soft dorsal, tips of caudal and pectoral not black, and they resemble very much the description of *C. acervum* C. V., which had about the same size, the pigment then apparently not yet being fully developed.

One specimen of 20 cM. from St. Eustatius in shallow water; the others, juv. of 70—97 mM. from the harbour of Curaçao.

Nomen indig.: *mulato* (L.); *spanish mackerel* (W.).

Habitat: Cape Cod to Brazil.

The most abundant species of the genus, regularly sold in the market of Curaçao.

245. *Cybium maculatum* Mitch.

Cybium maculatum, Günther, Catalogue Fishes II, p. 372.

" " Cuvier & Valenciennes, op. cit. VIII, p. 372.

Scomberomorus maculatus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 874.

We have a note of Dr. Boeke about another "spanish mackerel" from St. Eustatius, which was distinguished by the Curaçaoan fishermen from the former species as "piesjie sjee"; the only specimen collected was lost, but there is little doubt it was *C. maculatum*, the third member of the genus, the least common about these islands.

Habitat: from Cape Ann to Brazil; also at the Pacific coast of North America, doubtful from St. Thomé (Osorio).

CORYPHAENIDAE.

246. *Coryphaena hippurus* L.

Coryphaena marcrogravi, *sueurii*, *dorado*, *dolfijn*, *virgata*, *argyrurus*, *vlamingii*, *scomberoides*, Cuvier & Valenciennes, op. cit. IX, 1833, p. 301—315.

Coryphaena hippurus, Günther, Catalogue Fishes II, p. 405.

" " Jordan & Evermann, Fishes of N. & M. Am. I, p. 952.

One head only, of 13 cM. length. Eye $5\frac{1}{2}$. Maxillary $2\frac{1}{6}$. Pectoral $2\frac{1}{3}$. Pargobank, Aruba; the length of the fish may have been about 90 cM. Also recorded from the Windward islands.

Nomen indig.: *dolphin* (Curaçao); *dradu*, pap. dradoe (Aruba).
 Habitat: In all tropical seas.
 Important food-fish.

247. *Coryphaena equisetis* L.

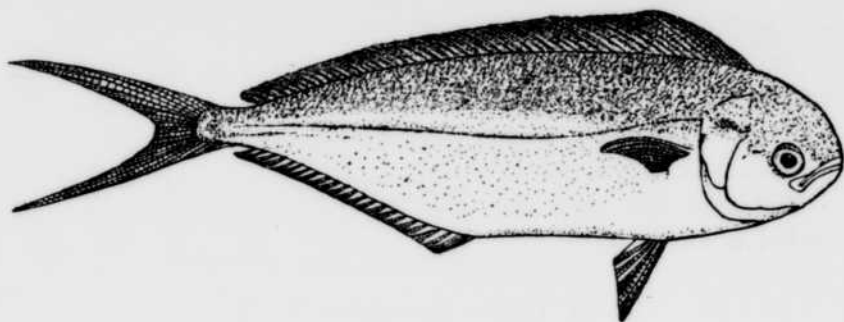


Fig. 35. *Coryphaena equisetis* L. $\times \frac{1}{3}$.

Coryphaena equisetis, lessonii, azorica, Cuvier & Valenciennes,
 l. c. IX, 1833, p. 297—306.

Coryphaena equisetis, Günther, Catalogue Fishes II, p. 407.

" " Jordan & Evermann, Fishes of N. & M.
 Am. I, p. 953.

D. 52; A. 23.

Head $4\frac{1}{5}$. Depth $3\frac{2}{5}$. Pectoral $1\frac{2}{3}$ i. h.

Two specimens of 30—34 cm., caught before the harbour of
 Curaçao, October. Also recorded from the Windward islands.

Nomen indig.: *dolphin*.

Habitat: Tropical seas.

An important food-fish at Curaçao.

XIPHIIDAE.

248. *Xiphias gladius* L.

Xiphias gladius, Cuvier & Valenciennes, op. cit. VIII, 1831,
 p. 255.

" " Günther, Catalogue Fishes, II p. 511.

" " Jordan & Evermann, Fishes of N. & M. Am.
 I, p. 894.

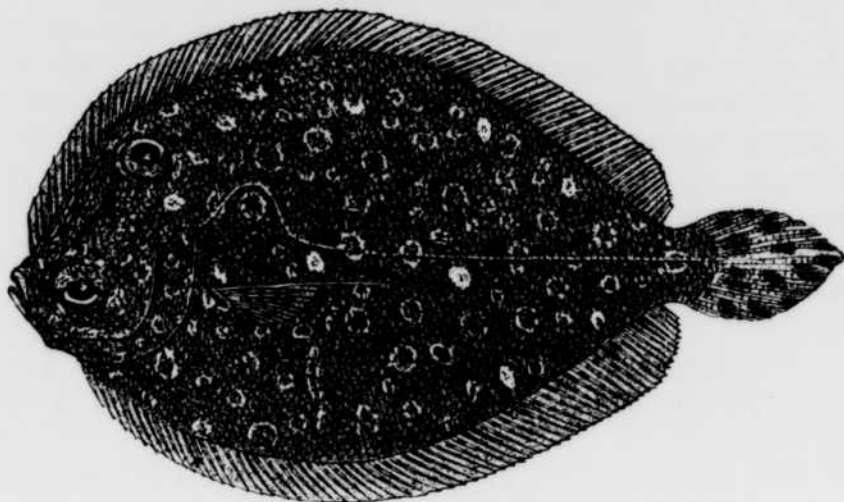
No material collected.

Nomen indig.: *balao*.

Habitat: Atlantic.

Estimated, and sold in small numbers in the market of Willem-
 stad and St. Eustatius.

PLEURONECTIDAE.

249. *Rhomboidichthys ocellatus* Agass.Fig. 36. *Rhomboidichthys ocellatus* Agass. ♂ $\times \frac{1}{3}$.

Rhomboidichthys ocellatus, Günther, Catalogue Fishes IV, p. 433.

Platophrys spinosus (Poey), Jordan & Evermann, Fishes of N. & M. Am. III, p. 2662.

" *ocellatus*, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2663.

" " Evermann & Marsh, Fishes of Portorico, p. 321.

D. 82; A. 58; Scales 73 (pores); (average formula).

Sexual differences strongly pronounced, the interorbital of female being contained $2\frac{2}{5}$ in that of male of same size, where it is $1\frac{5}{6}$ in head, and where the upper eye is situated so high that the front profile is deformed by it, most in specimens of 85 mM. Upper ray of pectoral elongate, specially in the males.

Colour: ground colour varying from citron-yellow to a rich brown, profusely ornated with white ocellated spots, the larger ones widening to broken-up rings. Some diffuse dark rings between them; two dusky blotches on lateral line. Life colour: dark-brown dots at blind side of head; a spot with minute, blue-margined dots before eye.

Dozens of specimens have exactly the same pattern of coloration; viz., there is a white spot below the upper eye, a row of four of them along the back, one beneath the lateral line before the second dusky blotch, and another row along the hindpart of the lower contour. All the rings and spots are constant and localised.

A very considerable number of specimens collected, some at the playa grandi of Wacao (Curaçao) and in the Schottegat; the majority at St. Eustatius and Saba (Tumbledown Dickbay, 5—6 fathoms; Wellbay, 1—1½ fathoms; Cave-round bay, 3—8 fathoms), where it is the most abundant of Pleuronectids. Length 33—85 mM.

Nomen indig.: *tapa tapa* (L.); *flounder* (W.).

Habitat: sandy shores from Long Island to Rio Janeiro; not estimated, probably never exceeding 3½ inch. It is so strikingly characterised, specially the males, that there is not the least doubt about the validity of this species; the adults cannot possibly be confounded with young of *Pl. lunatus* or *maculifer*.

250. ***Rhomboidichthys lunatus* L.**

Rhomboidichthys lunatus, Günther, Catalogue Fishes IV, p. 433.

Platophrys lunatus, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2665.

" " Evermann & Marsh, Fishes of Portorico, p. 323.

D. 94; A. 74; Scales 90—92 (pores).

Some fine specimens from Bonaire (palu leche); Curaçao (harbour); and St. Martin (Simonsbay lagoon). The blue rings, inclosing spots of the groundcolour have distinct black margins. Length up to 34 cM.

Nomen indig.: *tapa tapa*.

Habitat: West Indies, north to Florida. Also at St. Thomé (West Africa) according to Osorio.

251. ***Rhomboidichthys maculifer* Poey.**

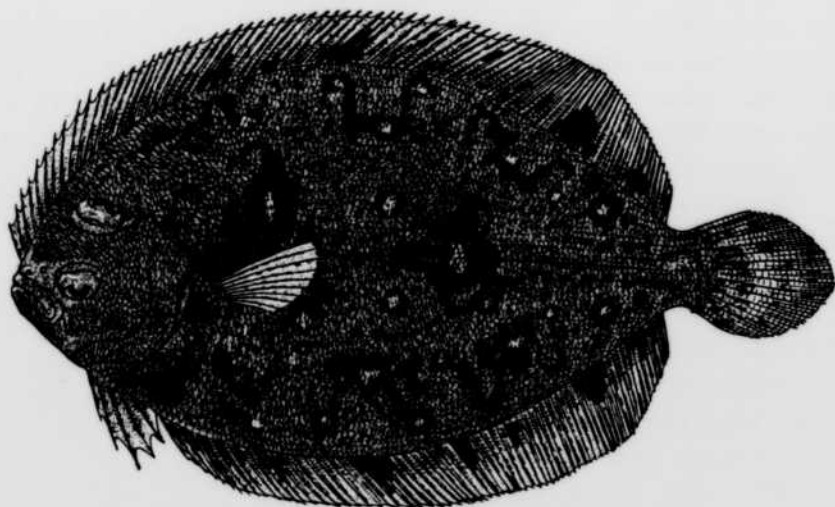


Fig. 37. *Rhomboidichthys maculifer* Poey. $\times \frac{3}{4}$.

Platophrys maculifer, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2664.

D. 90; A. 72; Scales 88—90.

Head 4. Depth $1\frac{3}{4}$ in length without caudal. Interorbital $4\frac{1}{2}$. Maxillary 3. Teeth uniserial. No filamentous pectoral rays. Arch of lateral line $2\frac{2}{5}$ in head, 4 in straight part. No striking sexual dimorphy.

Colour: differing from *Pl. lunatus*; there are fewer rings, for the greater part not completely closed, not so sharply defined by a black margin and more diffuse. Two very large black blotches on lateral line, the first with a well defined milky spot in its lower part, under the pectoral; other white spots above left eye, in temporal and axillary region. Base of dorsal and anal with a row of white spots and a few black ones, which are never present in *Pl. lunatus*. Some specimens from Curaçao are very dark, the blue spots are overshadowed and the whole fish is dusky-blotched; however four short paler crossbars towards the lower and the upper border of the body may be seen, margined by a dusky line, but open at their medial side as if they were originating from confluent ocelli.

Six specimens from Curaçao (Pescaderabay and playa grandi, Wacao). Length up to 14.5 cm.

Nomen indig.: *tapa tapa* (L.).

Habitat: known from Cienfuegos, Cuba.

Erroneously united with *Pl. lunatus* by Evermann & Marsh, l. c., p. 324.

252. *Hemirhombus micrurus* Ranzani.

Hemirhombus aramaca, Günther, Catalogue Fishes IV, p. 42.

Syacium micrurum, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2627.

" " Evermann & Marsh, Fishes of Portorico, p. 324.

D. 86—92; A. 56—66; Scales 58—68.

The depth of the larger specimens $2\frac{1}{3}$ — $2\frac{2}{3}$ in length. A distinct horn on the left side of snout. A row of 6—8 rather strong canini in upper jaw.

Colour: young much more vividly spotted than the older ones.

Several specimens from Curaçao (Pescaderabay); Bonaire (playa, paluleche); St. Eustatius ($1\frac{1}{2}$ —8 fathoms) and Saba. Length 10.5—18.5 cm.

Nomen indig.: *tapa tapa* (L.); *flounder* (W.).

Habitat: from Florida to Rio Janeiro.

253. *Citharichthys unicornis* Goode.

Citharichthys unicornis, Goode Pr. U. S. Nat. Mus. 1880, p. 342.

" " Jordan & Evermann, Fishes of N. & M. Am. III, p. 2683.

" " Evermann & Marsh, Fishes of Portorico, p. 325.

Two specimens, dirty brown; dusky blotch on dorsal and anal, and six inky-black spots on tail. Length 100—137 mm. Harbour of St. Eustatius.

Habitat: known from the Gulfstream and Portorico.

254. *Citharichthys* spec. juv. I.

D. 71; A. 53; Scales 37.

Head $4\frac{1}{2}$. Depth $2\frac{1}{2}$ in total. Pectoral rounded $1\frac{2}{3}$ i. h. Eyes close together, leaving a narrow ridge between them; $3\frac{1}{2}$. Maxillary 3. Body ovoidal, very evenly curved, strongly compressed. A spinule before upper eye, hidden in the flesh. Scales large, not deciduous; lateral line slightly curved.

Colour: plain brown, only the fins a little mottled. Apparently distinct from *C. unicornis*, but not fit for type of a new species, the largest measuring only 55 mm., not sufficient for specific diagnosis.

Saba, at a depth of 3—8 fathoms (Cave round bay).

255. *Citharichthys* spec. juv. II.

D. 66; A. 49; Scales 30.

Head $4\frac{1}{2}$. Depth $2\frac{1}{2}$ in total. Pectoral pointed, $1\frac{1}{2}$ in head. Eyes large, $3\frac{1}{2}$, close together with a narrow ridge between them. No spinules seen. Scales larger than in any other species of *Citharichthys*; lateral line nearly straight.

Colour: body and fins lively mottled with brown and white; two dusky blotches on posterior part of lateral line, the anterior part being placed higher than the posterior one, very sharply defined. Pectoral with black spots; traces of crossbands on caudal.

Apparently a new species.

St. Eustatius, Tumbledown Dick bay, 5 fathoms. Many specimens, up to 45 mM., not sufficient for specific diagnosis.

256. **Citharichthys spilopterus** Gnthr.

Citharichthys spilopterus, Günther, Catalogue Fishes IV, p. 421.

" *guatemalensis*, Bleeker, Ned. Tijdschr. Dierk. 1864, p. 73.

" *spilopterus*, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2685.

" " Evermann & Marsh, Fishes of Portorico, p. 326.

One specimen of 12 cM. from Trinidad, coll. De Weger.

Habitat: Both sides of tropical Atlantic.

257. **Achirus inscriptus** Gosse.

Solea inscripta, reticula, Günther, Catalogue Fishes IV, p. 472—73.

Achirus inscriptus, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2696.

" " Evermann & Marsh, Fishes of Portorico, p. 330.

D. 54; A. 40.

Three specimens collected at Curaçao, up to 75 mM.

Habitat: West Indies, north to Florida.

258. **Achirus lineatus** L.

Solea maculipinnis, Günther, Catalogue Fishes IV, p. 473.

Achirus lineatus, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2697.

" " Evermann & Marsh, Fishes of Portorico, p. 331.

D. 55; A. 45.

Head $3\frac{4}{7}$. Depth $1\frac{3}{5}$.

Three specimens, 52—77 mM., from Curaçao, reefwater.

Nomen indig.: *tapa tapa* (L.).

Habitat: From Florida to Brazil.

259. *Symphurus marginatus* Goode & Bean.

Aphoristia marginata, Goode & Bean, Bull. Mus. Comp. Zool. XII, No. 5, 153.

Symphurus marginatus, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2706.

One juv. of 25 mM. Points of dorsal and anal black. St. Eustatius; September.

GOBIIDAE

260. *Eleotris perniger* Cope.

Culius perniger, Cope, Trans. Am. Phil. Soc., 1870, p. 473, St. Martin.

Eleotris perniger, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2201.

D. VI, 9; A. I, 8; L. 1. 60.

Distance from tip of snout to insertion of dorsal $\frac{44}{100}$ of length (without caudal). Cheek practically naked, with a network of pore-lines. Length 6 cM.

One specimen from Curaçao.

Nomen indig.: *angieuw* (L.).

Habitat: West Indies, south to Rio Janeiro; apparently rare.

261. *Eleotris smaragdus* C. V.

Eleotris smaragdus, Cuvier & Valenciennes, op. cit. XII, 1837, p. 231.

" " Jordan & Evermann, Fishes of N. & M. Am. III, p. 2204.

D. VI, I, $10\frac{1}{2}$; A. I, 9; V. I, 5.

Depth $9\frac{1}{2}$. Eye $1\frac{1}{2}$ in interorb., 7 in head. Maxillary reaching vertical of pupil. In several specimens there occurs a small prae-opercular spine (so there are no reasons to separate off the species as a distinct genus). Middle dorsal spines $2\frac{1}{2}$ in head; last dorsal rays $1\frac{1}{2}$. Caudal $1\frac{1}{5}$ times head. Ventral 2 in head. Length up to 9 cM.

Several specimens from Curaçao (reefwater, Schottegat), and Bonaire.

Nomen indig.: *angieuw* (L.).

Habitat: known from Florida and Cuba.

262. **Gobius (Lophogobius) cyprinoides** Pallas.

Gobius cyprinoides, Cuvier & Valenciennes, op. cit. XII, 1837, p. 129; Günther, Catalogue Fishes III, p. 8.

„ *cristagalli*, Cuvier & Valenciennes, op. cit. XII, p. 130.

Lophogobius cyprinoides, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2209.

A characteristic and easily recognisable species.

Life colour: a brown margin to the capital crest; body spotted brown and green; a couple of paler horizontal bands from head to second dorsal. A large ocellus on first dorsal, terracotta with a darkbrown border. Second dorsal with a rosy basal band; caudal with red crossbands; a couple of brown crossbands, fading cranial.

A large number from the harbour and the reefs of Curaçao and from the Piescaderabay. Length up to 10 cm.

Nomen indig.: *brand* (L.).

Habitat: West Indies, north to Florida.

263. **Gobius saporator** Cuv. Val.

Gobius saporator, Cuvier & Valenciennes, op. cit. XII, 1837, p. 56.

„ „ Günther, Catalogue Fishes III, p. 26, 549.

„ „ Jordan & Evermann, Fishes of N. & M. Am. III, p. 2216.

„ „ Evermann & Marsh, Fishes of Portorico, p. 294.

D. VI, I, 9; A. I, 8—9; L. I, 36—39 (from pect. axil).

Colour: extremely variable:

a. Plain specimens, from pale olive to black; Curaçao (pools in the reef and between the algae in the reefwater).

Nomen indig.: *brand prètu* (i. e. black goby).

b. More or less regularly blotched; rows of short crossbars and spots on body; a dusky spot behind eye and one on shoulder. A juv. with dark spots on lower part of cheeks. Fins spotted or plain.

33 specimens from Curaçao (reefwater); Bonaire (reef); the playa of Aruba, and from Simonsbay lagoon, St. Martin.

Nomen indig.: *brand bobo* (= „striped goby”).

c. Ground colour pale, the rows of blotches (about 10 in a row), extremely sharply defined, a pair of blotches on base of caudal.

Pools in the coralreef; playa grandi of Wacao.

All these varieties have given rise to the nominal species of Poey. *G. soporator* is certainly the most common of gobies about these islands.

Habitat: tropical seas.

264. *Gobius curacao* nov. spec.

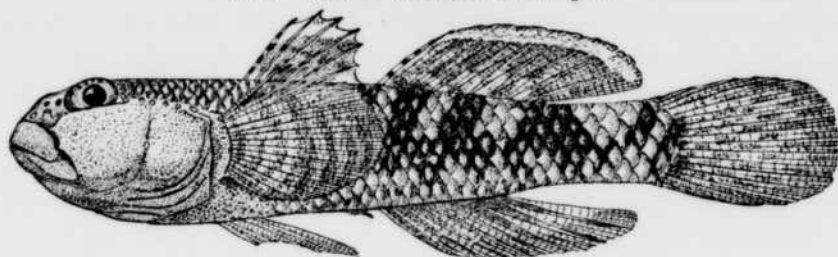


Fig. 38. *Gobius curacao*, nov. spec. $\times 2$.

D. VI, 10; A. 9; Scales 31—32 (from pect. axil).

Head $3\frac{1}{2}$. Depth $4\frac{1}{2}$. Eye $4\frac{1}{3}$. Snout little longer. General form as that of *G. soporator*; head blunt; profile rounded in front, flattened from the eye backward. Mouth oblique, reaching vertical of middle of eye. Teeth in bands, the outer ones not much enlarged. Region from nape to dorsal entirely scaled; scales large, slightly ctenoid. Dorsal spines short, the longest $1\frac{3}{4}$ in head. Caudal rounded, a trifle shorter than head. Anal pointed, reaching as far back as the dorsal, which just touches the upper caudal rays. Pectoral broad and fan-like, reaching to 14th or 15th scale.

Colour: Ground colour grayish brown, ornated with a broad zigzag of darker blotches. No humeral spot. Dorsal fin with a conspicuous white submarginal band; the first rays of both spinous and soft dorsal with black-and-white points, very characteristic in all specimens. A vague crossbar on caudal base.

Large numbers of specimens from Curaçao (Schottegat, reefwater), and Bonaire. Length 5 cM.

Nomen indig.: *brand* (L.).

265. *Gobius (Ctenogobius) tortugae* Jordan.

Ctenogobius tortugae, Jordan, Bull. U. S. Fish Commission, 1902, XXII, p. 541.

D. VI, 11; A. $10\frac{1}{2}$.

Colour: the dark spot behind eye black or decidedly sky-blue, (in the latter case it is larger). A streak beneath eye, continued on jaws, another one running parallel below it, both accentuated by a blotch. Blotch on operculer dusky or blue. Nape crest with 3 „blocks”; 3 rows of dark blotches to be traced on body; the terminal one on caudal peduncle being made up of 2 distinct black spots.

A number of fine specimens from Curaçao (reefwater, Schottegat, along the rocks, Waaigat), and St. Eustatius. Length 65 mM.

Nomen indig.: *brand* (L.).

Habitat: known only from the Tortugas.

266. *Gobius glaucofraenum* Gilb.

Coryphopterus glaucofraenum, Gilbert, Pr. Ac. Nat. Sc. Philad. 1863, p. 263.

Gobius glaucofraenum, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2219.

D. VI, 11; A. I, 10; Scales rubbed off for most part.

The large eyes leave only a narrow ridge between them.

Colour: Longitudinal lines evident on head; 9 black points along median line of back; caudal base with a pair of black spots.

Two specimens of 34 mM. from the lagoon of Aruba.

Habitat: known with certainty only from the Tortugas.

267. *Gobius mowbrayi* Bean.

Rhinogobius mowbrayi, Bean, Field Columb. Mus. Publ. Zool., VII, 2, 1906, p. 81, Bermudas.

D. VI, 10; A. 9; L. 1. 27.

Colour: 12 crossbands between pectoral insertion and caudal.

The material obtained of this very characteristic species is too small in size to mention further details.

Three specimens from Schottegat, Curaçao, 18 mM.

Nomen indig.: *brand*.

Habitat: known only from Bermudas.

268. *Gobius (Gnatholepis) thompsoni* Jordan.

Gnatholepis thompsoni, Jordan, Bull. U. S. Fish Commission, XXII, 1902, p. 541; Tortugas.

D. VI, I, 12; A. I, 11; Scales 30.

Longest dorsal spine equal to longest soft ray; $1\frac{2}{3}$ i. h.; pectoral reaching third anal ray.

Colour: dorsals and anal speckled with black dots; seven distinct crossbars on body; vertical dark line below eye extremely sharp.

Several specimens from the lagoon of Aruba, up to 68 mm., exactly resembling the type.

Habitat: known only from the Tortugas.

269. **Gobius oceanicus** Pallas.

Gobius lanceolatus (Bl.), Cuvier & Valenciennes, op. cit. XII, 1837, p. 114.

" *oceanicus*, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2230.

" " Evermann & Marsh, Fishes of Portorico, p. 296, fig. 91.

D. VI, 14; A. I, 14; L. I, 72.

Caudal fin split in life.

Several specimens from reefwater, Curaçao, and Schottegat, up to 14 cm.

Nomen indig.: *brand blanco* (L.).

Habitat: West Indies, north to the southern U. States.

270. **Aboma** spec.

D. VII, 12; A. 12; L. I, 30.

Profile of snout steep. Eyes large, nearly contiguous. Maxillary reaching to middle of pupil. First dorsal not filamentous. Caudal long and pointed.

Colour: groundcolour pale; a black vertical bar below eye. Black opercular spot. A dark line along middle of sides, broken up into 6—8 blotches. Fins variegated.

One specimen of 3 cm. from Aruba-lagoon, not in sufficient condition to serve as a type.

271. ? **Microgobius** spec.

D. VII, 11; A. 9.

Body naked up to second dorsal; 20 scales in lateral line from there. Profile very steep, nearly vertical. Snout and upper jaw projec-

ting. Second dorsal higher than first. Caudal rounded. Ventral reaching anus.

One specimen from the Bay of Asiento, Curaçao; 18 mM.

272. **Gobiosoma longum** Nichols.

Gobiosoma longum, Nichols, Bull. Am. Mus. Nat. Hist. XXXIII, 1914, p. 143 (figure poor).

D. VII, $13\frac{1}{2}$; A. $12\frac{1}{2}$; P. 19; V. 6.

First dorsal spine filamentous.

Colour: purplish, with seven darker double blotches along the lateral line. Some oblique streaks on cheek. Dorsal with four horizontal rows of spots; caudal with seven cross-lines.

One specimen of 85 mM., from the lagoon of Aruba, in algae, in very good condition.

Habitat: known only from Florida.

273. **Gobiosoma multifasciatum** Steind.

Gobiosoma multifasciatum, Steindachner, Ichth. Beitr. V, 1870, p. 183.

" " Jordan & Evermann, Fishes of N. & M. Am. III, p. 2260.

D. VII, 11; A. 11.

Colour: seventeen exceedingly distinct crossbands; no red line on head. Living in sponges, like the following species.

Several specimens from Curaçao (Fuikbay, Schottegat), and Aruba (Bay San Nicolas). Length up to 23 mM.

Nomen indig.: *brand* (L.).

Habitat: West Indies.

274. **Evermannichthys spongicola** nov. gen. et spec.

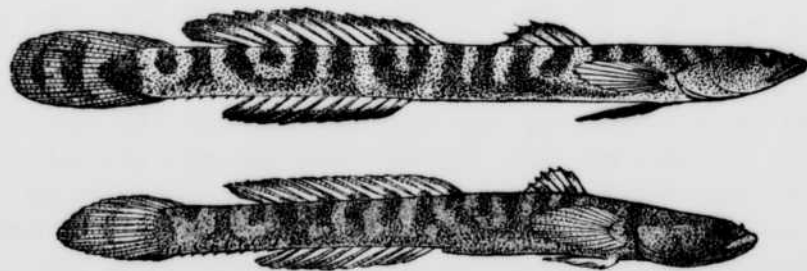


Fig 39 en 40. *Evermannichthys spongicola* nov. gen. et spec. $\times 4$.

D. (IV)—VI, 15—16; A. 11—12.

Head 4 ($5\frac{1}{2}$ in total). Depth 7 (10 in total). Form exceedingly slender, adapted to the life in narrow holes of sponges; head flat like that of an eel. Eye $1\frac{1}{2}$, large, nearly contiguous. Maxillary reaching posterior margin of eye. Upper jaw projecting. Dorsal and anal rather high, not filamentous, the last dorsal ray reaching base of caudal fin. Pectoral little shorter than head, equal to caudal fin, which has its point rounded. Ventrals united. Body naked, only the basal parts of caudal peduncle scaled with rather large, ctenoid scales.

Colour: brown; 14—16 black crossbands between head and caudal fin, broader than interspaces. Vertical fins translucent with a few blotches at base and a black margin; caudal with vague crossbars; pectoral pale, dusky at base.

Many specimens from Curaçao, all found *in sponges* in the Fuikbay and Schottegat, where the fish lives together with its congener *Gobiosoma multifasciatum*. Length up to 26 mm.

Named in honour of Mr. Barton Warren Evermann, the well-known ichthyologist.

275. *Xenogobius weberi* nov. gen. et spec.

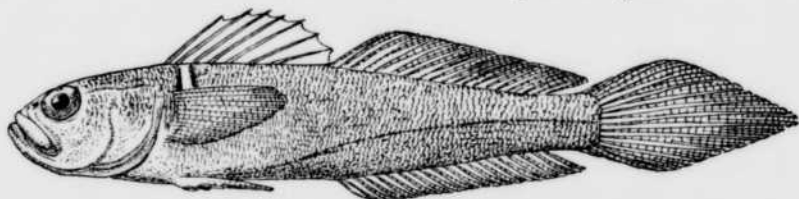


Fig. 40. *Xenogobius weberi* nov. gen. et spec. $\times 2$.

D. VII, 20; A. 20; L. l. ± 90 .

Head $4+$. Depth $4\frac{3}{5}$. Eye $3\frac{1}{3}$. Interorbital 2 in eye. Mouth very oblique. Maxillary reaching front of pupil. Lower jaw a little projecting. Teeth in one row, simple, rather wide apart without evident canini. A slight dorsal crest on occiput in continuity with dorsal fin. Head naked, also the nape, with lines of small pores. General form rather compressed; the eye not prominent; the greatest depth at first dorsal spine, making the impression of a relatively good swimmer. Scales minute, however there is a curious patch of larger, ctenoid scales on sides, just covered by the pectoral. Shoulder girdle without dermal flaps. Dorsal spines a little filamentous, $1\frac{1}{3}$ in head. Longest soft dorsal equal to anal rays, $2\frac{1}{2}$ i. h.;

caudal rhombic, abruptly pointed, longer than head; pectoral little shorter than head; ventral shorter, reaching $\frac{2}{3}$ of the length to vent, united. L.1.: see figure.

Colour: bleached, but very strikingly marked by a chalky-white humeral crossband, descending to the level of pectoral axil and bordered by black lines.

One specimen of 52 mM. from Curaçao, reefwater.

Nomen indig.: *brand*.

Perhaps allied to *Microgobius*.

Ξέρος, strange, for the curious squamation (perhaps acquired by boring habits?) and colours.

Named in honour of Prof. Dr. Max Weber, Amsterdam.

ECHENEIDAE.

276. *Echeneis naucrates* L.

Echeneis naucrates, Günther, Catalogue Fishes II, p. 384.

" " Jordan & Evermann, Fishes of N. & M.
Am. III, p. 2269.

" " Evermann en Marsh, Fishes of Portorico,
p. 301.

22—25 laminae.

Eye 5—6 $\frac{1}{2}$ in head (to tip of lower jaw). Snout 2—2 $\frac{1}{3}$. Pectoral 1 $\frac{1}{3}$ —1 $\frac{2}{5}$. Middle caudal rays 1 $\frac{5}{6}$ —2.

Three specimens from Curaçao (off. the harbour); Haiti, and Trinidad (coll. De Weger). Also recorded from Saba. Length up to 38 cM.

Nomen indig.: *pega* (L).

Habitat: Common in tropical and subtropical seas.

277. *Echeneis naucratoides* Zuiëw.

Echeneis holbrooki, Günther, Catalogue Fishes II, p. 382.

" *naucratoides*, Jordan & Evermann, Fishes of N. & M.
Am. III, p. 2270.

20 laminae.

Length of disk 4 in total.

Colour: ventrals of the same colour as the belly, much paler than pectorals.

One specimen from Curaçao of 33.5 cM.

Habitat: West Indies, north to Cape Cod.

278. *Echeneis remora* L.

Echeneis remora, squalipeta, Günther, Catalogue Fishes II, p. 377—78.

Remora remora, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2271.

17—19 laminae.

Several specimens from Curaçao (sea off harbour), and the playa of Bonaire; usually from swordfishes.

Nomen indig.: *pega* (L.).

Habitat: Warm seas.

SCORPAENIDAE.

279. *Scorpaena plumieri* Bloch.

Scorpaena plumieri, Günther, Catalogue Fishes II, p. 113.

" *bufo*, Cuvier & Valenciennes, op. cit. IV, p. 306.

" *plumieri*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1849.

" " Evermann & Marsh, Fishes of Portorico, p. 277.

D. (XI) XII, 10; A. III, 5.

Several specimens of this easily recognisable, large species, one with eleven dorsal spines (exceptional in *Scorpaena*). Curaçao; Bonaire (palu leche); St. Eustatius (off Tumbledown Dick bay, on sand, 5—6 fath.), and St. Martin. Length up to 25 cm. The scorpaena most feared by the natives.

Nomen indig.: *brandvissie corra* (i. e. red fiery fish) (L.); *lion fish* (W.).

Habitat: From Florida to Brazil.

280. *Scorpaena grandicornis* C. V.

Scorpaena grandicornis, Cuvier & Valenciennes, l. c. IV, 1829, p. 309.

" " Günther, Catalogue Fishes II, p. 114.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1850.

" " Evermann & Marsh, Fishes of Portorico, p. 277, fig. 84.

D. XII, 9—10; A. III, 5; L. 1. 24.

Head $2\frac{2}{3}$. Depth $2\frac{2}{3}$. Eye 4. Longest dorsal spines equal to second anal spine, $1\frac{2}{3}$ i. h. Supraocular flaps variable in length, sometimes very exaggerated.

Colour: pectoral axillary spot evident.

Several specimens from Curaçao (reefwater, harbour). Length 55—160 mm.

Nomen indig.: *brandhorovissie* (i. e. fish with burning horns(?)).

Habitat: From Florida to Brazil, also on West African coast.

281. *Scorpaena bergii* Everm. & Marsh.

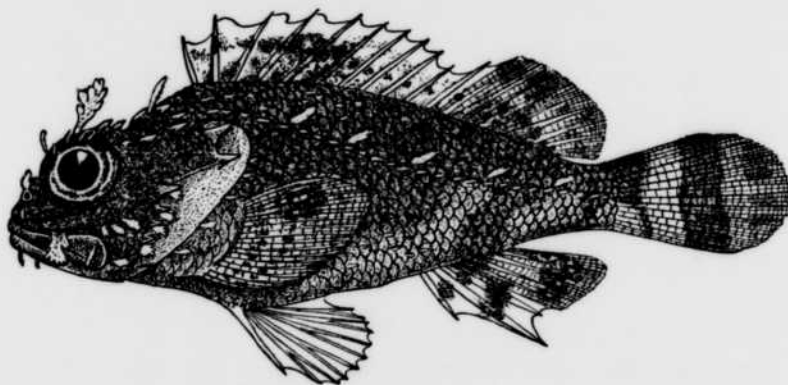


Fig. 42. *Scorpaena bergii* Everm. & Marsh. $\times 2$.

Scorpaena bergii, Evermann & Marsh, Fishes of Portorico, p. 276, fig. 83.

D. XII, 9—10; A. III, 5; P. 18—17; Pores 25.

Head $2\frac{1}{2}$ — $2\frac{2}{5}$. Depth $2\frac{5}{7}$ — $2\frac{2}{3}$. Width of head $1\frac{3}{7}$ in its length. Eye 3. Snout 4. Maxillary 2, nearly reaching posterior border of orbit, 5 in length to caudal. Interorbital behind first supraocular spine: 7. Supraorbital-ridges strong, with 3 spines, the first with a minute, the second with a strong tentacle, reaching the third dorsal spine or suborbital stay when turned back (if best developed). Nasal, postocular, coronal, parietal, nuchal, exoccipital, humeral spines present; interorbital deep. Opercle with two strong, flat spines and another one on a level with the lower praeopercular spine, the praeopercle having three pungent spines, the upper one with an accessory spine at its base, and two blunt ones. A small pit below eye. Suborbital stay without spines except terminal ones.

Praeorbital with three blunt spines. Dermal flaps well developed: nasal flaps and three at preorbital; curious lacerate flaps covering upper part of eye. Palatine teeth present. Distance from tip of snout to first dorsal spine $2\frac{3}{4}$ in length; first dorsal spine $1\frac{1}{2}$ in second; second spine 2 i. h., 5 in length; third spine shorter; longest soft ray equal to second spine. Second anal spine $2\frac{1}{3}$ i. h.; caudal $1\frac{1}{3}$; pectoral 3 in length, $1\frac{2}{7}$ — $1\frac{2}{5}$ i. h., without flap. Base of pectoral 7 in body; 3 i. h. Ventral $3\frac{1}{2}$ —4 in body, $1\frac{1}{2}$ — $1\frac{3}{4}$ i. h.

Colour: agrees chiefly with *S. bergii* Everm. & Marsh, but the ventrals are dark, chiefly at tip; in one specimen however they are pale. In one specimen the opercular flap is white.

This species differs from *Sc. grandicornis* at first sight by the presence of coronal spines (e.g.: those at the anterior corners of the occipital pit). The specimens differ from the description of *Sc. bergii* of Everm. & Marsh in having longer pectorals and ventrals, maxillary and tentacles, and a profusity of flaps on body and eyes (a character very variable in *Scorpaena*). Of the opercular spines the accessory one may have been overlooked by the authors.

Four specimens from Curaçao and the lagoon of Aruba. Length 65 mm.

Nomen vulgare: *brandhorovissie* (L.).

Habitat: known only from Portorico.

282. *Scorpaena albifimbria* Everm. & Marsh.

Scorpaena albifimbria. Evermann & Marsh, Fishes of Portorico, p. 275, fig. 82.

D. XII, 9; A. III, 5; P. 19—20.

Head $2\frac{1}{4}$ (3- in total). Depth 4 in total. Eye 3+, a trifle longer than snout and close together. Interorbital at its narrowest point 7—8 in head. Maxillary 2, reaching posterior border of orbit. Head remarkably flat, the occipital pit obsolete, the spines being sharp but little developed. A large preopercular spine in continuity with suborbital stay. Upper eyelid large, lacerate; supraocular filament minute or slightly prolonged; shoulder flaps large and little fettered; conspicuous flaps along lateral line, a profusity of small ones on head. Second dorsal spine $2\frac{2}{3}$ i. h. Second and third anal spine subequal,

about equal to diameter of eye. At least the first six pectoral rays branched.

Colour: dark specks overwhelming the white ones in the larger specimens. Soft vertical fins and pectoral banded with dark; ventrals pale to dusky.

Eight specimens from Curaçao and Aruba (Bay San Nicolas, lagoon). Length: 28—64 mM. (A small species.)

Habitat: known only from Portorico.

283. *Scorpaena alhofasciata* nov. spec.

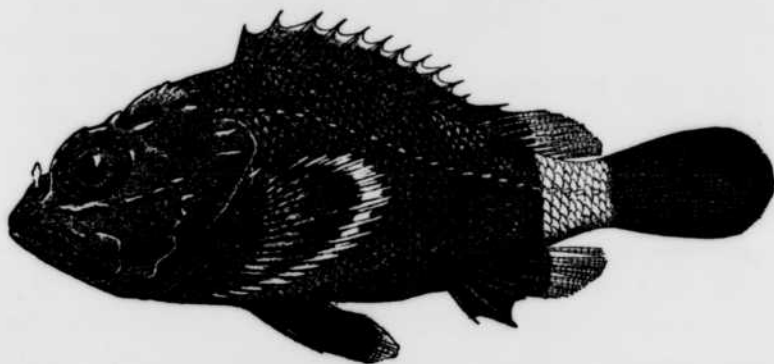


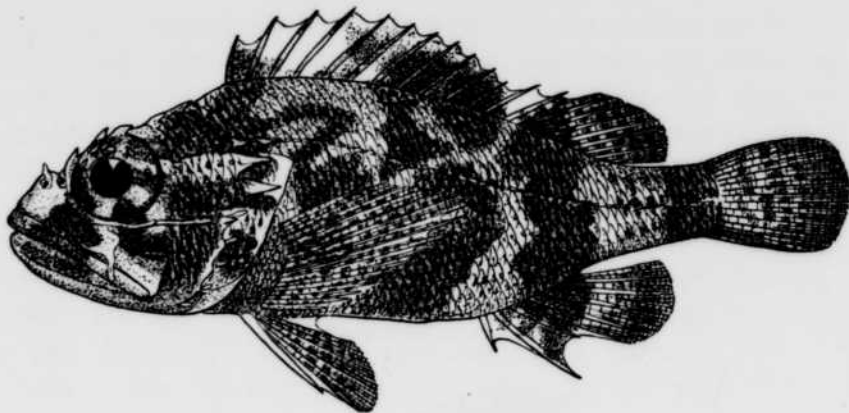
Fig. 43. *Scorpaena alhofasciata* nov. spec. $\times 4$.

D. XII, 9; A. III, 5; Pores 23.

Head $2\frac{1}{3}$. Depth $2\frac{1}{2}$. Spines of head rather flat, not very prominent, covered by the skin. Coronal spines obsolete. Parietal, nuchal, exoccipital and humeral spines present. Parietal spines long and low. Opercular and humeral spines best developed. No suborbital or occipital grooves. Dermal flaps of head and body weakly developed, nor is there an orbital tentacle or a lacerated eyelid. Eye large, $2\frac{1}{3}$. Maxillary to posterior border of eye. Interorbital nearly flat, supraocular ridges not very prominent. Soft dorsal and anal just reaching the caudal base with their points. Pectoral reaching 12th pore of lateral line; ventral reaching anus.

Colour: Very dark, with a white crossband on caudal peduncle, extending on vertical fins, extremely sharply defined, very characteristic for this species. Some darker shadings on head and body; spinous dorsal marbled; caudal dusky to pale; pectoral and ventral black, white-tipped.

Two specimens, Bonaire and Aruba, 23—25 mM.

284. *Scorpaena tredecimspinosa* nov. spec.Fig. 44. *Scorpaena tredecimspinosa* nov. spec. $\times 2$.

D. XIII, 9; A. III, $5\frac{1}{2}$; L. 1. 48.

Head $2\frac{1}{2}$. Depth 3. Eye 3. Maxillary $1\frac{4}{5}$, reaching end of pupil, or posterior margin of eye. Jaws sub-equal. Interorbital very concave, with two median ridges ending in small spines. No occipital depression; praeopercular, two ocular (with dermal flaps), coronal, parietal, nuchal, humeral spines. Exoccipital small. A small spinule between the coronal spines. Subocular stay with three little-projecting spines. Top and sides of head well-scaled. Nasal tentacle bifid. Cephalic tentacles few and short, non one body. Palatine tooth less. Vomer little dentate. Top and sides of head and the breast well-scaled. Dorsal notched, almost to base, its longest spine $2\frac{2}{3}$ —3. Second anal spine much longer than third. Caudal rounded, its middle rays $1\frac{3}{5}$. Pectoral reaching front of anal fin, its upper rays branched; the eight lower ones simple, the upper ones of which are the longest. Ventral $1\frac{3}{5}$.

Colour: beautiful, much like *Sc. grandicornis*; a rich rosy with crossbands of dark-brown, extending on vertical fins; caudal and paired fins profusely dotted, as a rule not forming bands on the latter. (See figure.)

N.B. The species is at once characterised by the 13 dorsal spines, constantly occurring in all our specimens, thus forming a transgression to the *Sebastodes*-group.

Four specimens from Bonaire and Punta-brabo, Aruba; 44—60 mm.

TRIGLIDAE.

285. *Prionotus punctatus* Bloch.

Prionotus punctatus, Cuvier & Valenciennes, op cit. IV, 1829,
p. 93.

" " Günther, Catalogue Fishes II, 193.

" " Jordan & Evermann, Fishes of N. & M.
Am. II, p. 2169.

" " Evermann & Marsh, Fishes of Portorico,
p. 283.

D. X, 11½; A. 11 (!).

First three dorsal spines little granular. Cheekspine sometimes exceedingly small.

Colour: blue margin of pectoral wanting in most specimens;
Several specimens from Curaçao (Schottegat); Venezuela (Cumana),
and Trinidad. Length up to 23 cm.

Nomen indig.: *Bolado di binnenwater* (i. e. flying fish of the
water behind the reefs and the peninsula) (L.).

Habitat: West Indies, south to Brazil.

DACTYLOPTERIDAE.

286. *Dactylopterus volitans*.

Dactylopterus volitans, Cuvier & Valenciennes, op. cit. IV,
1829, p. 117.

" " Günther, Catalogue Fishes II, p. 221.

Cephalacanthus volitans, Jordan & Evermann, Fishes of N. & M.
Am. II, p. 2183.

" " Evermann & Marsh, Fishes of Por-
torico, p. 285, fig. 86.

Several specimens of this well-known fish collected at Curaçao
(Waaigat, Schottegat). Length up to 16.5 cm.

Nomen indig.: *Bolado di binnenwater*; more properly called
so than the former species (L.).

Habitat: Both coasts of the Atlantic.

DACTYLOSCOPIDAE.

287. *Gillellus semicinctus* Gilb.

Gillellus semicinctus, Gilbert, Proc. U. S. Nat. Mus. 1890, p. 98.

" " Jordan & Evermann, Fishes of N. & M.
Am. III, p. 2298.

D. III, IX, 25; A. II, 30; L. l. 25 + 18.

One small specimen of this species, of 3 cM. collected at Aruba, (lagoon).

Habitat: Florida; also known from the Gulf of California.

288. ***Dactyloscopus tridigitatus* Gill.**

Dactyloscopus tridigitatus, Gill, Ac. Nat. Sc. Philad., 1859,
p. 132.

" " Günther, Catalogue Fishes III, p. 279.

D. XII, 28—29; A. II, 32—33.

Head $4\frac{3}{5}$. Depth 7— in total. 15 opercular filaments.

Three specimens from Wacao, playa grandi (Curaçao); 60—76 mM.

289. ***Dactyloscopus poeyi* Gill.**

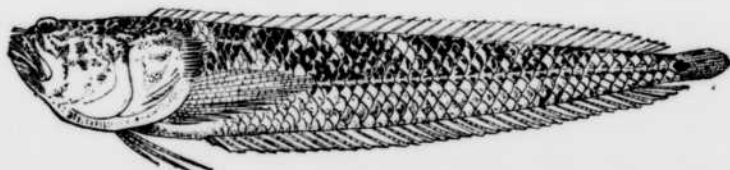


Fig. 45. *Dactyloscopus poeyi* Gilb. $\times 2$.

Dactyloscopus poeyi, Gill, Proc. Ac. Nat. Sc. Philad., 1861,
p. 266.

" " Jordan & Evermann, Fishes of N. & M.
Am. III, p. 2302.

D. 40; A. II, 33; P. 14; L. l. 13 + 30; L. tr. 4 + 4.

Head (to base of fringes) $4\frac{1}{4}$ in total. Depth 6 in total. Eye 4, its length exceeding interorbital width. Width of head $1\frac{1}{2}+$ in length. Maxillary $2\frac{1}{4}$ in head. Labial fringes evident; nasal filament; 18 filaments at opercle. Pectoral $1\frac{1}{3}$ in head. Distance from tip of snout to beginning of dorsal $\frac{2}{9}$ of total.

Colour: 12 pale crossbars; head vermiculated with white and a pair of short, wavy, black lines on front. The crossbarring is probably a juvenile character of the whole genus; our specimen is smaller than the original type (7 cM.).

Windward Islands, one specimen.

Habitat: known only from Cuba.

CALLIONYMIDAE.

290. *Callionymus pauciradiatus* Gill.

Callionymus pauciradiatus, Gill, Ann. Lyc. Nat. Hist. N. Y.
VIII, 1865, p. 143.

" " Jordan & Evermann, Fishes of
N. & M. Am. III, p. 2188.

D. III, 6; A. 4; C. 12; P. 6; V. \pm 18.

Head $3\frac{1}{3}$. Depth of head equal to length of its postorbital portion. Mouth small, its cleft about half of eye. Praemaxillary very protractile. Maxillary not nearly reaching anterior border of eye. Interorbital extremely narrow, about equal to pupil. Praeopercular spine slender, with 3 hooks, 2 pointing upwards, the last ones backwards. Lateral line arched over gillopening and connected with its fellow by a crossline, which touches the front of the dorsal ridge. First dorsal spine $4\frac{2}{5}$ in body. Tail not filamentous.

Colour: python-like, with pale areas on a pale background, all very narrowly lined with black; two very conspicuous blotches, irregularly but more or less symmetrically placed, the first between eyes, the second (paired) behind it, of about the size of the pupil. Spinous dorsal tipped with black; all other fins translucent and finely dotted with dark brown.

Three specimens from Curaçao (Schottegat) and St. Eustatius, (150 M. from the shore; 12 fathoms!). Length 28—38 mm. There is a note of Dr. Boeke that this species reaches a length of 10 cm.

Nomen indig.: *pega di barranca* (barranca = rock) (L.).

Habitat: known from Matanzas, Cuba.

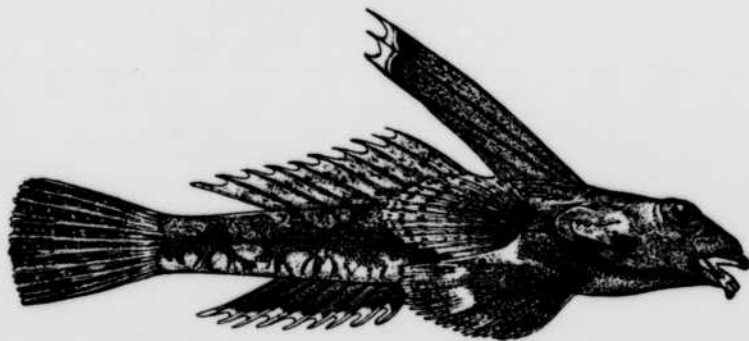
291. *Callionymus boekei* nov. spec.

Fig. 46. *Callionymus boekei* nov. spec. \times 1.5.

D. IV, 10; A. 9; C. 12; P. 19; V. I, 5.

Head (to gillopening) $3\frac{3}{4}$ in body. Depth $5\frac{1}{4}$. Eye $3\frac{1}{2}$, close together. Borders of orbit not raised. Maxillary scarcely reaching eye, $3\frac{3}{5}$. A strong spine on praeopercle with the three upper hooks all pointing upwards, and the lower (fourth) one forward. Seen from above, the spine points in a straight line with the cheeks. Lateral lines connected on nape; on body simple. Gillopening reduced to a pore. Spinous dorsal elevated, nearly half the length of body; anterior soft ray longest, $4\frac{3}{5}$ in body; tips of caudal and anal just reaching caudal base. Caudal as long as head with flaps, not filamentous, equal to ventral. Pectoral equal to head (to gill-pore).

Colour: very dark; back ornated with crossbands; spinous dorsal dusky, more so towards tip, with a number of small ocellated dots; margin paler. A sharply defined, submarginal, white line, bordered by a proximal black one. Soft dorsal with some horizontal dotting; anal black; caudal and pectoral with corssbars; ventral dotted with black.

One specimen from Wacao (playa grandi), Curaçao. Length 7 cm.

Seems to be related to *C. pauciradiatus*.

Named in honour of its discoverer, Dr. J. Boeke.

292. *Callionymus sancti eustatii* nov. spec.

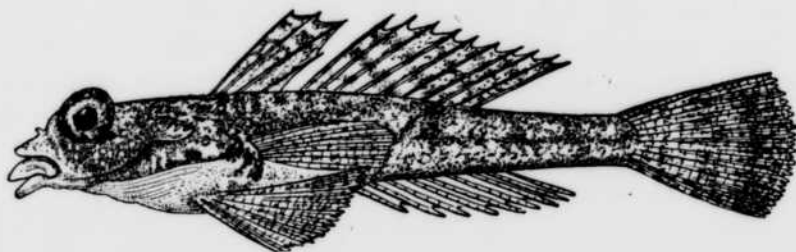


Fig. 47. *Callionymus sancti eustatii* nov. spec. $\times 2$.

D. IV, 10; A. 9; C. 13; P. 20.

Head (to branchial pore) $3\frac{1}{4}$. Depth $5\frac{1}{2}$. Eye 3, close together, but not so much as in the former species, their upper borders evidently raised above the level of the head, crest-like. While in *C. boekei* the lines of snout, cheek and praeopercular spine, seen from above, form nearly a regular triangle, the regularity in this species is disturbed by the projecting snout. Opercular spines exactly as in *C. boekei*. Maxillary scarcely reaching vertical from eye. Praemaxillaries freely protractile. Lateral line simple, running to eye, but connected by a crossbranch on nape. A fold of skin, bounding

the breast, before the pectorals. Spinous dorsal short, 5 in length, equal to anterior soft rays, which are the longest. Points of anal reaching farther back than dorsal, but just not reaching caudal base. Caudal longest, rounded, 3 in length, equal to ventral. Pectoral 4.

Colour: purplish rosy; fins pale, all spotted with brown, save the spinous dorsal, which is more of a plain dusky tinge.

One specimen from St. Eustatius, of 54 mm.

Seems also to be related to *O. pauciradiatus*.

GOBIESOCIDAE.

293. *Gobiesox nudus* Bl. Schn.

Gobiesox nudus, Günther, Catalogue Fishes III, p. 502.

" " Jordan & Evermann, Fishes of N. & M. Am. III, p. 2331.

D. 11—12; A. 7; P. 19—21.

Colour: dotted all over with black; vertical fins in one specimen black (*nigripinnis* Peters). A dark blotch anteriorly on dorsal fin, and two horizontal dark bands along the whole fin. Black blotches on roots of upper and lower caudal.

Two specimens from Curaçao and Bonaire; 4 cm.

Habitat: West Indies.

294. *Gobiesox sancti martini* nov. spec.

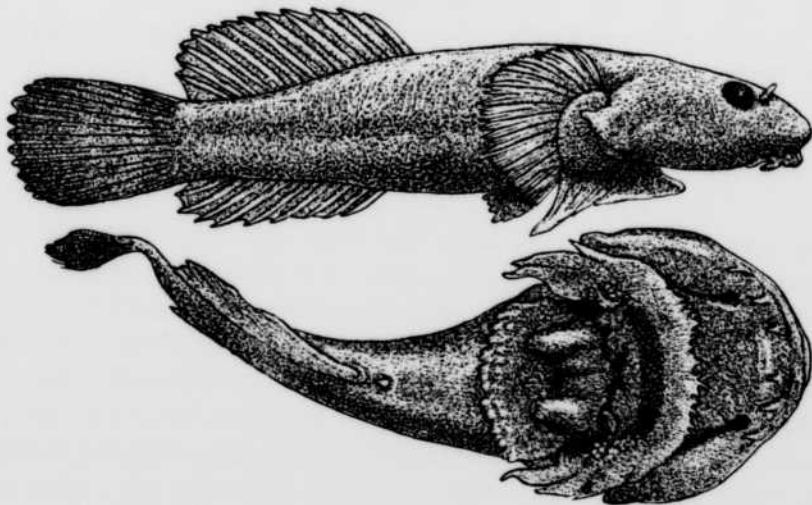


Fig. 48. *Gobiesox sancti martini* nov. spec. $\times 1.5$.

D. 12; A. 9.

Head $3\frac{1}{2}$ in total, depth $5\frac{3}{4}$. Width of head 3 in total. Eye 2 in bouy interorbital, small. Fleshy interorbital 3 i. h. Maxillary reaching middle of eye. Outlines of head somewhat concave seen from above, caused by the projecting of the snout. Lips double: a broad dermal fold bordering the mouth; chin with a double row of papillae. Teeth in one row, a few of them caniniform in both jaws, irregularly placed. Anterior nostril with a fringe. Opercle ending in a spine hidden in the flesh. Middle dorsal rays longest, 2 i. h. Distance from tip of snout to dorsal insertion 2 in total. Distance from dorsal insertion to caudal base $3\frac{2}{3}$ in total. Anal point reaching equally far back as dorsal, past caudal base. Caudal rounded, 4 in body. Pectoral 2- in head, 6 in body. Ventral disk $3\frac{2}{3}$ in body.

Colour: rosy; vertical fins dusky, dorsal and caudal with a pale band.

One fine specimen of 7 cM. from St. Martin, Simonsbay lagoon. Its eggs stuck to the inside of a shell.

BLENNIIDAE.

The differences in the dentition are not sufficient to divide the genus **Clinus** into four separate genera, as worked out by Jordan, Bull. U. S. Fish Commission XXII, 1902, p. 544.

295. **Clinus puertoricensis** Everm. & Marsh.

Malacoctenus puertoricensis, Evermann & Marsh, Fishes of Portorico, p. 309.

D. XXI, 9; A. II, 18; P. 15; L. l. 43.

Head $3\frac{1}{2}$. Depth $3\frac{1}{2}$. Eye 3. Maxillary just reaching anterior border of eye. Head pointed, jaws prominent, profile bent out by the large eye. Snout 3. A bifid orbital tentacle; 3 nuchal tentacles on each side. Teeth in jaws in a single row. No vomerine teeth. Profile of dorsal fin rather accidentated, its spinous portion emarginate subanteriorly and posteriorly; the first three spines not wide apart; middle spines longest, $2\frac{3}{4}$ i. h.; highest soft rays 2. Pectoral equal to head; ventral shorter.

Colour: very distinctly crossbanded, little extending on dorsal fin; the band beneath the end of spinous dorsal suddenly darkened to a black blotch. No ocellus on dorsal; all fins pale, translucent.

It lacks the front dorsal blotch and pectoral base-line of *C. bimaculatus*.

One specimen of 34 mM. from the reefwater of Curaçao; March.
Nomen indig.: *brand corra* (L.).

Habitat: Known from Portorico.

296. *Clinus bimaculatus* Steind.

Clinus bimaculatus, Steindachner, Ichth. Beitr. V, 1876, p. 180; Cuba.

Malacoctenus bimaculatus, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2558.

D. XX, (9) 10 (11); A. II, 18—19; L. I. 45—48.

Head 4-. Depth 4-. Orbital tentacle bifid or trifid. Longest soft dorsal ray $1\frac{1}{2}$ in head. Spinous dorsal less accidentated than in *C. puertoricensis*.

Colour: the anterior dorsal blotch extending on first three spines only; an inky blue line on base of pectoral.

Several specimens from Curaçao (tidal pools in the reef, Otrabanda, Wacao (playa grandi); Aruba lagoon; lake of Bonaire. Length up to 58 mM.

Nomen indig.: *brand* (L.).

Habitat: Known only from Cuba.

297. *Clinus herminier* Lesueur.

Blennius herminier, Lesueur, Journ. Ac. Nat. Sc. Philad. IV, 1824, p. 361.

Clinus hermineri, Cuvier & Valenciennes, op. cit. XI, 1836, p. 380.

D. XIX, 10—11; A. II, 18—19; C. 14; P. 13; V. 3; L. I. 49—51 (!).

Head $3\frac{2}{5}$. Depth $4\frac{1}{3}$. Eye 3. Maxillary $3\frac{1}{2}$, not reaching posterior border of eye. Spinous dorsal concave after the third spine and its posterior part. First dorsal spine not the longest, decidedly exceeded by many others. Scales larger than in *C. nuchipinnis*, lateral line arched along margin of pectoral, when depressed.

Colour: black blotch on anterior dorsal spines; opercular blotch distinct, never absent; crossbanding (6 bands) extending on vertical fins, most distinct in juv. All the fins with a profusity of black spots on rays only; a white band to base of caudal.

Several specimens from Curaçao (Cornelisbay, reefwater) and Bonaire (lake). Length up to 85 mM.

N.B. In the original description there has been apparently a printing-mistake in the pinnal formula, putting 16 instead of 19(!). The species is certainly different from *Clinus nuchipinnis* but has about the same coloration.

Nomen indig.: *brand* (L.).

Habitat: known only from St. Bartholomew.

298. *Clinus nuchipinnis* Quoy Gaim.

Clinus nuchipinnis, Günther, Catalogue Fishes III, p. 262.

„ *pectinifer*, Cuvier & Valenciennes, op. cit. XI, 1836, p. 374.

Labrisomus nuchipinnis, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2362.

D. XVIII, 12—13; A. II, 17—19; L. 1. 66—70.

Eye 4—4½. Maxillary 2. Vomer with a larger median tooth and about 5 smaller ones on both sides of it; palatine with a few teeth anteriorly. 109 vertical rows of scales.

Colour: the black opercular spot obsolete in the larger specimens. Also the crossbanding on body is most distinct in juv. A black blotch on anterior dorsal spines more or less evident.

Number of specimens from Curaçao (pools in the reef; Wacao, playa grandi); St. Martin (Simonsbay lagoon); Venezuela (La Guayara), and Trinidad. Length up to 16 cm.

Nomen vulgare: *brand bobo* (i. e. striped blenny).

Habitat: From Florida to Brazil, also known from West Africa the most common of the genus here.

299. *Clinus bucciferus* Poey.

Labrisomus bucciferus, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2363.

Erieteis kalisheræ, Jordan, Bull. U. S. Fish Commission XXII, 1902, p. 553.

D. XX, 10—11; A. II, 19—20; P. 13; V. 3; L. 1. 43.

Head 3⅓—3⅔. Depth 4. Eye 3¾. Snout 3½. Maxillary 2, reaching posterior border of eye. Palatine with a few strong teeth anteriorly; vomer without a stronger median tooth. Orbital tentacle strong, multifid. Nuchal filament well developed; nasal

tentacle present. Spinous dorsal with a nearly straight margin; the first little longer than 19th. Longest soft rays $1\frac{5}{6}$, much longer than spines; pectoral $1\frac{1}{3}$; ventral $1\frac{2}{3}$.

Colour: two short, black, horizontal bands on the anterior dorsal spine; body with five broad, black crossbands. Fins profusely ornated with black spots on the rays only, those on anal arranged in 9 bands.

But for a slight difference in the pinnal formula the fish resembles closely the description of *Ericteis kalisheræ* Jordan. It differs from *C. nuchipinnis* chiefly in the larger number of fin-rays, in the longer first dorsal spine, and in coloration; it has, however, the same, sometimes ocellated, circular black blotch on opercle.

Collected at Curaçao (Wacao), and in the „lake” of Bonaire. Length up to 8 cm.

300. **Brannerella brasiliensis** Gilbert.

Brannerella brasiliensis, Gilbert, Proc. Ac. Wash. II, 1900, p. 180.

D. XXI, 8; A. I, I, 18; L. l. 39.

Three specimens from Fuikbay, Curaçao; April. Length 4 cm.

Nomen indig.: *brand*.

Habitat: known only from Maceio, Brazil.

301. **Brannerella sluiteri** nov. spec.

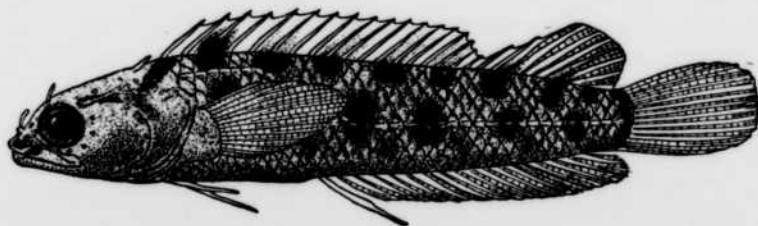


Fig. 49. *Brannerella sluiteri* nov. spec. $\times 4$.

D. XX, 7; A. I, I, 17; C. 13; V. 2; L. l. 36.

Head $3\frac{3}{4}$. Depth $3\frac{3}{4}$. Body rather compressed. Eye large, 3. Snout a little pointed, 4 i. h. Jaws equal, maxillary reaching posterior border of eye. Nasal tentacle long and slender; a small orbital tentacle and a pair of nuchal flaps. Interorbital narrow. Gill membranes united, largely free from isthmus. Scales large, the lateral line well arched over pectoral. Anterior dorsal spines not elongate. Soft dorsal higher than spinous dorsal; a deep notch in the region of the 18th spine.

First anal spine long and detached. Pectoral and ventral well developed; caudal truncate, $1\frac{1}{3}$ i. h.

Colour: very conspicuous; ground colour deep yellow with three rows of inky black, round blotches. In the top row 10; the second blotch extending on dorsal; in the second row 6 blotches, in the lower one 3; nape shield red; two black spots at posterior part of anal base. A black bar on caudal base; dorsal with dusky shades; anal with a dusky submarginal band, otherwise pale.

Two specimens of 24 mM. from Bonaire (lac).

Named in honour of Prof. C. Ph. Sluiter of Amsterdam.

302. **Auchenopterus affinis** Steind.

Cremnobates affinis, Steindachner, Ichth. Beitr. V, 1876, p. 178.

Auchenopterus affinis, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2371.

D. XXX, 1; A. II, 17; L. l. 34.

A distinct, deep notch behind the third dorsal spine.

Colour: 8 dusky blotches on dorsal, 6 on anal fin. A distinct dorsal ocellus. No crossbands to be seen, but horizontal, faint, paler streaks.

Much alike to *Paraclinus chaperi*, but easily distinguished from that species by the *one* soft dorsal ray, the deep notch in the dorsal fin, and the more acute and elevate form of the head.

Six fine specimens from Curaçao (pools in the reef) 4 cM.

Nomen indig.: *brand*.

Habitat: recorded from Key West and St. Thomas.

303. **Paraclinus chaperi** Mocquard.

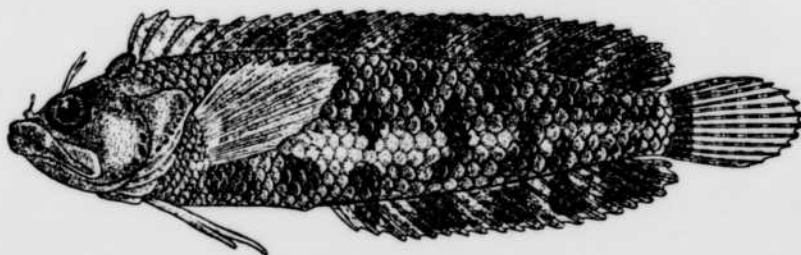


Fig. 50. *Paraclinus chaperi* Mocquard. $\times 2.25$.

Acanthoclinus chaperi, Mocquard, Bull. Soc. Phil., Paris, 1885, p. 19.

Paraclinus chaperi, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2374.

D. XXIX—XXX; A. II, 18—19; L. 1. 35—36.

The 4 anterior dorsal spines wider apart and gradually lower than the others, but as a rule no evident notch, which is, however, sometimes distinct.

Colour: Body with a distinct zig-zag banding; a well-marked ocellus on the posterior third of dorsal fin, sometimes indistinct. Dorsal with 9 dusky blotches. A black cross band on root of caudal. Anal with 7 dusky blotches. Nuchal flaps blueblack with a yellow margin.

A great number of specimens from Curaçao (Schottegat, reefwater-pools), and Aruba (Bay San Nicolas).

Nomen indig.: *brand*.

Habitat: known from Venezuela only.

304. *Histioclinus veliger* nov. gen. et spec.

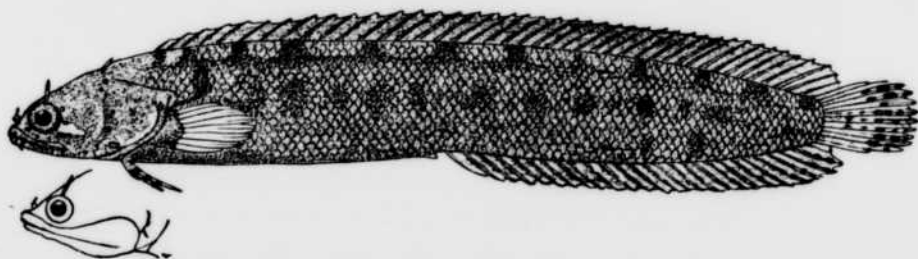


Fig. 51. *Histioclinus veliger* nov. gen. et spec. $\times 4$.

D. 42; A. I, 26; P. 7; V. 2; 60 transv. rows of sc.

Head 4; depth $6\frac{1}{2}$. Eye $3\frac{1}{2}$, larger than snout. Maxillary large, reaching past eye. Lips broad, with dermal folds, uniting at the corner of the mouth to form a large, velum-like dermal appendage. Jaws with conical teeth in one row at the sides; no vomerine or palatine teeth. Anterior narine with a short filament; orbital tentacle flat, longer than eye. A pair of small nuchal flaps. Gill membranes largely confluent. General form of body very long, slender and compressed. Vertical fins gradually increasing their height towards end, rather low, confluent at base with the caudal, which is, however, largely a separate fin (rounded). Pectoral 2 i. h., its middle rays longest. Ventrals well developed, jugular. Lateral line not developed; scales small and cycloid, failing on head.

Colour: a dusky margin to vertical fin, two blotches on ventral; body pale (bleached!); two row of dusky spots along back; caudal and anal dotted with black.

Several specimens from Bonaire (lake). Length up to 35 mm.

Seems to be related to *Gunellichthys* Bleeker.
Nomen indig.: *brand*.

305. ***Blennius cristatus* L.**

Blennius crinitus, Cuvier & Valenciennes, op. cit. XI, 1836,
p. 237: *nuchifilis* p. 253.

" " Günther, Catalogue Fishes III, p. 224.

" *cristatus*, Jordan & Evermann, Fishes of N. & M.
III, p. 2382.

D. XII, 14--15; A. 17 (19).

Colour: a distinct black blotch on two anterior dorsal spines
in ♂ only; nuchal filaments red in life.

Number of specimens from Curaçao (tidals pools in reef) and
Bonaire (reefs). Length up to 95 mM.

Nomen indig.: *brand*.

Habitat: tropical Atlantic, both sides.

306. ***Salarias (Rupiscartes) atlanticus* C. V.**

Salarias atlanticus, Cuvier & Valenciennes, op. cit. XI, p. 321,
1836.

" " Günther, Catalogue Fishes III, p. 242.

Rupiscartes atlanticus, Jordan & Evermann, Fishes of N. & M.
Am. III, p. 2397.

D. XII—XIII, 20—21; A. 23 (24).

A well developed anal papilla in male.

Colour: a dark spot behind eye; anal with dark margin.

A large collection from Curaçao (pools in the reef, Cornelisbay),
and Bonaire („lac"). Length: 10 cM.

Nomen indig.: *pega pega*.

Habitat: both coasts of tropical America.

307. ***Salarias margaritaceus* Poey.**

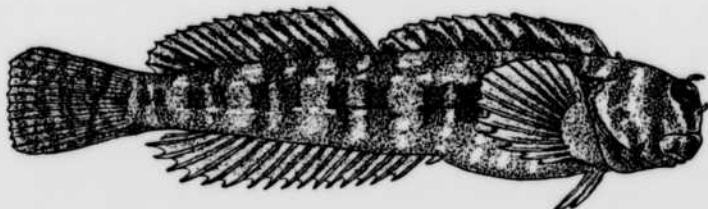


Fig. 52. *Salarias margaritaceus* Poey. $\times \frac{4}{3}$.

Salarias margaritaceus, Poey, Memorias II, 289, Cuba.

Entomacrodus margaritaceus, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2398.

D. XII, (14)—15; A. (17)—18.

Perfectly corresponding to the notes on the „possible type” of Jordan & Evermann.

Several specimens from Curaçao (pools in the coral-reef, Fuik-bay, among the algae); St. Martin (Simonsbay, rocks and Oysterpond).

Nomen indig.: *brand*.

Habitat: known from Cuba only.

308. ***Acanthemblemaria spinosa*** nov. gen. et spec.

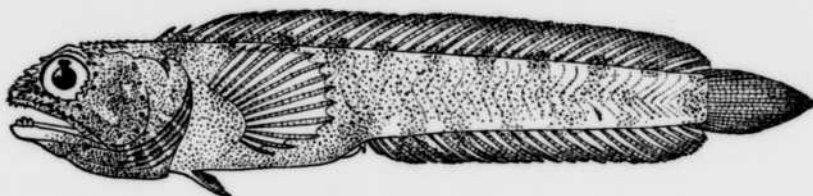


Fig. 53. *Acanthemblemaria spinosa* nov. gen. et spec. $\times 4.5$.

D. 34; A. 25; P. 13; V. 3.

Head 4. Depth $5\frac{1}{3}$ in total. Eye $3\frac{1}{2}$. Interorbital 4, concave. Front profile very steep to eye, thence horizontal. Head thick and heavy compared to the slender and compressed body. Maxillary reaching posterior margin of orbit. Teeth in one row in upper jaw, very strong, especially anteriorly. In lower jaw a few villiform teeth behind frontrow. Vomer and palatine dentate. Body naked, but front and top of head with short, strong spines, surrounding the eye, very strong on supraorbital ridge and leaving the cheeks naked. A thick, multifid, ocular filament. Fins without spines; dorsal and anal low, with a straight border, not adnate to caudal, which is pointed. Pectoral fanlike, $1\frac{5}{6}$ in head. Ventrals very small.

Colour: Olivaceous, with traces of dusky crossbands, finely punctulate with innumerable brown dots.

One specimen of 24 mM. from Curaçao.

Its relations doubtful; occupying a special place amongst the Blennids.

BATRACHIDAE.

309. ***Batrachus surinamensis*** Bl. Schn.

Batrachus surinamensis, Günther, Catalogue Fishes III, p. 173.

” ” Meek & Hall, Proc. Ac. Nat. Sc. Philad. 1885, p. 61.

Batrachoides surinamensis, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2314.

Colour: distinctly crossbanded, like the european species.

Two specimens, one from Paramaribo (March), 29 cM. the other from Georgetown (November). This is probably the fish called „tapa conchie” by the inhabitants of the shores of Curaçao.

Habitat: Coast of South America to Brazil.

310. *Thalassophryne maculosa* Gnthr.

Thalassophryne maculosa, Günther, Catalogue Fishes III, p. 175.

” ” Jordan & Evermann, Fishes of N. & M. Am. III, p. 2324.

D. II, 17; A. 16.

Head $3\frac{2}{5}$ in total. Width $3\frac{2}{5}$ in total. Length of eye exceeds fleshy interorbital. Dermal fringes on both jaws well developed; a row along anal base and a pair of short flaps on each side of caudal base. Pores of lateral line little confluent; two cross channels on head, moreover short rami around the cheek. Vertical fins little adnate to caudal base. Caudal $\frac{1}{5}$ of total. Pectoral reaching base of 7th anal spine.

Colour: brownish, much marbled and spotted. Four broken-up cross bars on body; pectoral and caudal with narrow dusky bars. Belly pale.

One specimen of 33 mM. from Aruba.

Habitat: known only from Puerto Cabello, Venezuela.

ANTENNARIIDAE.

311. *Antennarius gibbus* Mitch.

Chironectes laevigatus, Cuvier & Valenciennes, op. cit. XII, p. 399, 1837.

Pterophryne gibba, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2717.

D. III, 12; A. 7 (?); P. 9; C. 9.

Three last dorsal and several anal rays *doubled*. Bait bulbous, filamentous.

One beautiful adult of 12 cM. from Curaçao and a juv. of 72 mM.

Nomen indig.: *zumbi-vees*.

Habitat: West Indies, north to Florida.

312. *Antennarius scaber* Cuv.

Chironectes scaber, Cuvier & Valenciennes, op. cit. XII, 1837, p. 412.

Antennarius histrio, Günther, Catalogue Fishes III, p. 188.

" *scaber*, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2722.

P. 10—11.

Cutaneous appendages more developed in young on body and dorsal spines. Tentacle rather strong with a bifid bait, well developed. Fine specimens from Curaçao (harbour, reefwater, Nieuwpoort). Nomen indig.: *Zumbi-vees*.

Habitat: West Indies.

313. *Antennarius scaber* Cuv., var. *tigris* Poey.

Chironectes tigris, Poey, Memorias, I, 217, pl. 17; Cuba.

Antennarius tigris, Garman, Bull. Iowa Lab. Nat. Hist., 1896, p. 83; cited in Jordan and Evermann, Fishes of N. & M. Am. III, p. 2723.

P. 10—11.

Cutaneous filaments less developed, with transgressions, however, to *A. scaber* f.t. Tentacle more slender, rather multifid than bifid, weaker than in *A. scaber*. These differences, however, do not justify specific separation.

Several (5) specimens from Curaçao (reefwater, Otrabanda).

Nomen indig.: *Zumbi-vees*.

Habitat: like the former.

314. *Antennarius pardalis* C. V.

Chironectes pardalis, Cuvier & Valenciennes, op. cit. XII, p. 420, pl. 363.

Antennarius pardalis, Günther, Catalogue Fishes III, p. 198.

" *verrucosus*, Bean, Field. Col. Mus. Zool. Series VII, p. 88.

D. III, 12; A. 7; C. 9; P. 10; V. 6.

Antenna nearly three times the length of second dorsal spine, $4\frac{1}{2}$ in total, with a tuft of lacerate filaments. Mouth vertical. Maxillary $3\frac{3}{4}$.

Colour: orange-red in life; a stellate figure like that of *A. stellifer* in both specimens, very inconspicuous.

Two specimens, of 13 cM., from Bonaire („lae”), and St. Martin (Simonsbay lagoon). A juv. of 2.5 cM., apparently also belonging to this species, although the antenna, with a fringed tuft of filaments, is relatively much shorter.

Colour: yellow in life.

The only difference with *A. verrucosus* Bean is the failing of the „dusky patch” under the pectoral.

Nomen indig.: *Zumbi-vees*.

Habitat: Tropical Atlantic.

MALTHIDAE.

315. *Malthe vespertilio* L.

Malthe vespertilio, Cuvier & Valenciennes, op. cit., XII, p. 440, 1837; *longirostris*, p. 452.

„ „ „ Günther, Catalogue Fishes III, p. 200.

Ogcocephalus vespertilio, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2737.

„ „ „ Evermann & Marsh, Fishes of Portorico, p. 338, fig. 110—111.

One specimen from Curaçao; another, juv., from St. Eustatius (Jenkinsbay, 6 fathoms) is described as follows: body black; snout white; caudal white, pectoral white; ventral black at base, than orange, than black with a white margin. Length up to 85 mM.

Nomen indig.: *sea bat* (W.).

Habitat: West Indies, north to Florida.

BALISTIDAE.

316. *Balistes capriscus* Gmelin.

Balistes capriscus, Günther, Catalogue Fishes VIII, p. 217.

„ „ „ Hollard, Ann. Sc. Nat. 1854, I, p. 309.

„ „ „ *carolinensis*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1701.

D. III, 27; A. I, 24.

Head 3. Depth $1\frac{5}{6}$. Eye 3+. Snout $1\frac{1}{2}$. Branchial slit shorter than eye. Caudal peduncle 2 in snout. Body rough, the rugosities assuming the character of spinules along ventral keel and base of

dorsal fin. First dorsal spine stout and strong, equal to snout, inserted just behind vertical of posterior eye-border, spinulated, but without barbs. Ventral spine short and thick, scarcely projecting before the ventral flap, spinulated, and a row of 5 barbs at its inner side besides. Three larger scapular scales, surrounded by a couple of smaller ones.

Colour: brown, variegated with darker; 5 dark crossbands from front of soft dorsal to caudal base; blue spots on back and snout evident. Rows of pale spots on soft dorsal.

One specimen of 7 cM. from St. Eustatius.

Nomen indig.: „old wife” (W.).

Habitat: Tropical Atlantic.

317. *Balistes vetula* L.

Balistes vetula, Günther, Catalogue Fishes VIII, p. 215.

” ” Jordan & Evermann, Fishes of N. & M. Am. II, p. 1703.

” ” Evermann & Marsh, Fishes of Portorico, 256, pl. 39.

Caudal points produced excessively in adults.

Several specimens of this easily recognisable fish from Curaçao (Waaigat); St. Martin (bay), and Haiti (Aux Cayes). The largest 36 cM.

Nomen indig.: *piesjie porco* (L.); *old wife* (W.).

Habitat: Tropical Atlantic.

318. *Balistes ringens* L.

Balistes ringens, Günther, Catalogue Fishes VIII, p. 221.

” *lineopunctatus*, Hollard, Ann. Sc. Nat. 1854, Série 4, I, p. 65.

Xanthichthys ringens, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1709.

” *cicatricosus*, Cope, Trans. Am. Phil. Soc. 1871, p. 479; St. Martin.

D. III, 31—33; A. II, 28—29; C. 12—13; L. l. 50; L. tr. 39.

Head 4. Depth $1\frac{2}{3}$. Eye $5\frac{1}{2}$. Snout $1\frac{1}{3}$. Caudal points produced. Collected at Curaçao, Westpointbay. Length 25 cM. fine specimen.

Nomen indig.: *piesjie porco prètu* (i. e. black pig-fish).

Habitat: tropical seas, but not recorded from West Africa.

319. *Monacanthus ciliatus* Mitch. juv.

Monacanthus occidentalis, Günther, Catalogue Fishes VIII, p. 237.

" *ciliatus*, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1714.

" " Evermann & Marsh, Fishes of Portorico, p. 258.

D. I, 30—32; A. 31—33.

Head 3—. Depth $1\frac{1}{2}$. Eye 4. Snout $1\frac{1}{5}$. Distance from orbit to gill-opening equal to width of gill-opening. Cirrhi scattered over the body. Tailspines evident in most males; they are represented in the female by two naked spots. Some of the ordinary scales have confluent spinules, thus resembling a spinous fin, seen with the microscope.

Colour: males as a rule with a much more evident black blotch on ventral flap than females, where it may be altogether absent. General colour in life grass-green, belly yellowish green.

One specimen from Curaçao, Wacoo; the rest, some 60 specimens, from St. Eustatius (off Tumbledown Dick bay, 18 fathoms). Length 50—75 mm.

Nomen indig.: *piesjie porco* (L.), *bastard old wife* (W.).

Habitat: West Indies, north to Florida.

320. *Monacanthus setifer* Benn.

Monacanthus setifer, Benn. Proc. Zool. Soc. London 1830, p. 112.

" " Günther, Catalogue Fishes VIII, p. 239 in part.

" *filamentosus, gallinula*, Valenciennes, Iles Canaries, p. 95, 1836.

" *massachussetensis*, Storer, Fishes Mass., 1846, p. 174.

" *auriga*, Lowe, Proc. Zool. Soc., 1850, p. 253.

" *filamentosus*, Troschel, Arch. Nat. Gesch. 1866, I, p. 238; (W. Afr.) (Not *M. hispidus* Jordan & Evermann).

D. I, 30; A. 30; C. 12; P. 13.

Head $3\frac{1}{3}$. Depth between insertions of vertical fins $2\frac{1}{4}$ (agreeing in this respect with the (american) specimen of Hollard, where the depth is also less than half the length). Eye 3 in snout. Distance from orbit to branchial slit equal to width of branchial slit, 3 in

snout. Scales with *arborescent* spines, agreeing with the figure of Hollard, but still more complicated; those on caudal peduncle villiform and arranged bristle-like. No caudal spine. Dorsal spine (broken) inserted behind postocular vertical, with retrorse barbs on each side. First dorsal ray short; second ray much produced, $\frac{1}{3}$ of total length.

Colour: dullbrown; traces of horizontal black blotches on back.

One specimen from Bonaire; 19 cm.

Nomen indig.: *piesjie porco*.

Habitat: both sides of tropical Atlantic.

We have compared the specimen with two females of West Africa. Its form is somewhat more elongate, but the species is notoriously variable (see second part of this paper), and there does not seem to be any real specific difference.

321. *Monacanthus tuckeri* Bean.

Monacanthus tuckeri, Bean, Catalogue of Bermudan Fishes, Field Columb. Mus., Publ. VII (2), 1906, p. 78.

? " *spilonotus*, Cope, Tran. Am. Phil. Soc. 1870, XIV, p. 476; Gulf of Mexico (fewer anal rays, front straight).

D. I, 32—35; A. 34—35.

Head $2\frac{1}{2}$ — $2\frac{2}{3}$. Depth at origin of anal 3. Eye $2\frac{1}{2}$ —3 in snout. Gill-opening just under posterior margin of eye, its width equal to its distance from orbit. Frontal profile rather strongly concave. Scales with simple spinules on a small crest, those on ventral flap much enlarged, with a maximum of 5 spinules; a distinct, narrow ridge of enlarged scales runs parallel with dorsal and anal fin-base. Dorsal spine granular, with two rows of strong barbs behind, pointing downwards, backwards and sideways; its length $4\frac{1}{2}$ in body.

Colour: Brownish, dotted with dark spots on forehead, back and sides. Caudal peduncle clouded, a dark ring on snout. Dorsal spine vittate. Region of body-cavity pale. Ventral flap with white seams; fins pale, caudal with 4 crossbands, its tip dark.

Several specimens from St. Eustatius and St. Martin (Simonsbay lagoon). Length 45 mm.

Nomen indig.: *Spotted bastard old wife*.

Habitat: known from the Bermudas.

322. *Pseudomonacanthus amphioxys* Cope.

Monacanthus amphioxys, Cope, Trans. Am. Phil. Soc. 1871, p. 477; St. Martin.

Pseudomonacanthus amphioxys, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1717.

D. I + rud., 32—35; A. 30—32.

Head ($2\frac{4}{5}$ —) 3 (— $3\frac{1}{4}$). Depth $1\frac{1}{2}$ — $1\frac{5}{6}$. Eye ($3\frac{1}{2}$ —) 4 (— $4\frac{1}{2}$); $2\frac{2}{3}$ —3 in snout. Gillcleft 1— $1\frac{1}{3}$ times eye. Tail more or less bristly. Dorsal spine $4\frac{1}{3}$ — $4\frac{1}{2}$ in total.

Colour: round spots on body; lines running from mouth.

Several specimens from Curaçao (Pescaderabay, Waagat, reef-water); Bonaire and St. Martin; the most common of the family. Length up to 17.5 cm.

Nomen indig.: *piesjie porco fluit* (i. e. whistle-pig fish).

Habitat: not common elsewhere in the West Indies.

323. *Aluterus punctata* Agass.

Alutera punctata, Jordan & Rutter, Proc. Ac. Nat. Sc. Philad., 1896, p. 127.

" " (*Ceratacanthus punctatus*), Jordan & Evermann, Fishes of N. & M. Am. II, p. 1718.

D. I, 37; A. 40.

Head $3\frac{1}{2}$. Depth $2\frac{1}{5}$. Eye 5. Snout 1. Ventral flap absent.

One specimen from St. Martin, Simonsbay lagoon, 26 cm.

Nomen indig.: *piesjie porco*.

Habitat: West Indies to Brazil.

OSTRACIONTIDAE.

324. *Ostracion triqueter* L.

Ostracion triqueter, Günther, Catalogue Fishes VIII, p. 256.

Lactophrys triqueter, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1723.

" " Evermann & Marsh, Fishes of Portorico, p. 262, fig. 74.

Several specimens of this easily recognisable fish from Curaçao (reefwater); Bonaire (palu-leche); St. Martin (bay), and Haiti (Aux Cayes). Length 10—25 cm.

Nomen indig.: *chapin*, *caja di morto*.

Habitat: West Indies, north to Bermudas.

325. **Ostracion bicaudalis** L.

Ostracion bicaudalis, Günther, Catalogue Fishes VIII, p. 257.

Lactophrys bicaudalis, Jordan & Evermann, Fishes of N. & M.

Am. II, p. 1723.

" " Evermann & Marsh, Fishes of Portorico, p. 264, pl. 40.

Several specimens from Curaçao (reefwater) and Haiti (Aux Cayes). Length 17—26 cm.

Nomen indig.: *chapin*.

Habitat: from Cuba to Ascension.

326. **Ostracion trigonus** L.

Ostracion trigonus, Günther, Catalogue Fishes VIII, p. 256.

" *expansum*, Cope, Trans. Am. Phil. Soc., Philad., 1871, p. 474; St. Martin.

Lactophrys trigonus, Jordan & Evermann, Fishes of N. & M.

Am. II, p. 1723.

" " Evermann & Marsh, Fishes of Portorico, p. 263, fig. 75—76.

One specimen of 20 cm. from Curaçao.

Nomen indig.: *chapin*.

Habitat: from Florida to Brazil.

327. **Ostracion quadricornis** L.

Ostracion quadricornis, Günther, Catalogue Fishes VIII, p. 257.

" *gronovii*, Bleeker, Ned. Tijdschr. Dierk. II, p. 298.

Lactophrys tricornis, Jordan & Evermann, Fishes of N. & M.

Am. II, p. 1724.

" " Evermann & Marsh, Fishes of Portorico, p. 264, fig. 77.

Form of carapax rather variable; snout very concave in young of 11 cm., becoming more vertical in older specimens, where a gibbosity, under the level of eye, is developed. Young with a large gibbosity on back, making the transverse section pentagonous instead of quadrangular.

Width of ventral aspect of carapace is contained $3\frac{1}{3}$ in its length, $1\frac{1}{2}^+$ in juv.; its depth $2-2\frac{1}{5}$, form more stretched in old specimens. Frontal spines pointing upward in young, their length is equal to diameter of eye (reckoned from orbit). Ventral spines reaching $\frac{2}{5}$ ths to nearly the whole distance till end of carapace (to middle of caudal in young).

Colour: brown olive, each scute with a distinct ocellus, which are confluent on back and cheeks; snout and base of fins dark. Young paler yellowish green in life, with very regular black spots (blue in spirits).

Collected at Curaçao (reefwater); St. Martin (bay); St. Eustatius (Jenkinsbay), and Haiti, coll. De Weger. Juv. (W.) of 25—37 mM.; the others, adults, up to 25 cm.

Nomen indig.: *Rey di chapin, fototo* (L.), also called *chupa chupa* (i.e. „sucking”).

Habitat: from Carolina to Brazil; also on the other side of the Atlantic.

TETRODONTIDAE.

328. *Tetrodon (Lagocephalus) lagocephalus* L.

Tetrodon lagocephalus, Günther, Catalogue Fishes VIII, p. 273.

” ” Osorio, Journ. Sci. Math. Phys. Nat. Ac.

Lisboa, IIª Serie, II, 1890, p. 59; (Angola).

” ” Capello, Mem. Ac. Lisboa, VI, pt. I,

1881, p. 41; (Portugal).

D. 13—14; A. 12—13.

Head $3\frac{1}{3}$. Eye oblong, $2\frac{1}{2}$ in snout, 6 in head. Interorbital 3 in head. Gill-opening situated slightly past $\frac{1}{3}$ of the distance from snout to end of anal fin. Snout blunt. Caudal peduncle equal to head from middle of pupil; without skin-fold. Belly entirely covered with four-rooted spinules, which form a cross (of 6 mM. in the largest specimen). Dorsal and anal opposite, falcate. Height of dorsal 2 in head. Caudal emarginate.

Colour: bluish, the smaller specimens with 9 darker crossbars on back; caudal fin with a black centre.

Two specimens from the stomach of a sword-fish, captured near Curaçao. They were still in determinable condition, but heaven knows where they came from.

Habitat: Both sides of Atlantic.

329. **Tetrodon (Lagocephalus) pachycephalus** Ranzani.

Lagocephalus pachycephalus, Jordan & Rutter, Proc. Ac. Nat. Sc. Philad., 1897, p. 128.

" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1728.

D. 13; A. 12; P. 17.

Head 3. Depth 4.

One specimen from Cumana (Venezuela) at a depth of 60 M. Coll. De Weger. Length 32 cM.

Habitat: West Indies to Brazil; not common.

330. **Tetrodon (Spheroides) spengleri** Bloch.

Tetrodon spengleri, Günther, Catalogue Fishes VIII, p. 284; (in part).

Spheroides spengleri, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1732.

" " Evermann & Marsh, Fishes of Portorico, p. 267, fig. 79.

" " Nichols, Bull. Am. Mus. N. Hist. XXXIII, p. 81.

D. 7—8; A. 7.

Very prickly on back and belly. Most specimens with three rows of cirri.

Colour: brown in spirits; 12—13 conspicuous blotches bounding the belly-line.

Large number of specimens from St. Eustatius (off Tumbledown Dick bay, 18 fathoms); one from Curaçao; none exceeding 55 mM.

Nomen indig.: *toad fish* (W.).

Habitat: West Indies, north to Florida. Also from West-Africa.

331. **Tetrodon (Spheroides) marmoratus** Ranzani.

Tetrodon spengleri, Günther, Catalogue Fishes VIII, p. 284; partim.

Spheroides marmoratus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1733.

" " Evermann & Marsh, Fishes of Portorico, p. 368.

A distinct lateral fold bounding the belly.

One specimen of 14.5 cm. from St. Martin (Simonsbay lagoon).

Habitat: West Indies, to Brazil.

332. **Tetrodon (Spheroides) harperi** Nichols.

Spheroides harperi, Nichols., Bull. Am. Mus. Nat. Hist., Vol. XXXIII, p. 81.

D. 8; A. 7.

Head $2\frac{3}{5}$ — $2\frac{3}{4}$ in total. Eye $3\frac{3}{5}$ — $4\frac{1}{2}$. Snout 2 — $2\frac{1}{4}$. Bony interorbital half the diameter of eye. Very prickly on back and sides on anterior half, save the largest specimen, which has a smooth belly. Longest dorsal ray $2\frac{3}{5}$ — $2\frac{3}{4}$ in head. Anal $3\frac{3}{10}$. Pectoral $2\frac{2}{3}$.

Colour: only five blotches in a row bounding the belly; caudal dusky at base and tip.

Several specimens from St. Eustatius (off Tumbledown Dick bay, 5—6 fathoms, Jenkins bay). Length 43—50 mm.

Nomen indig.: *toad fish*.

Habitat: known only from Florida.

333. **Tetrodon (Spheroides) eulepidotus** nov. spec.

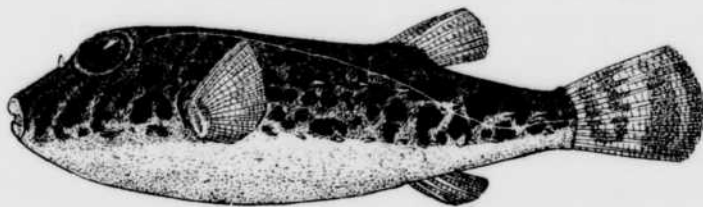


Fig. 54. *Tetrodon eulepidotus* nov. spec. Nat. size.

D. 8; A. 6.

Head $2\frac{7}{8}$. Eye nearer to gill-opening than to tip of snout, 4 i. h. Snout $1\frac{9}{10}$. Bony interorbital very narrow, nearly 2 in horizontal diameter of eye. Profile concave, nasal tentacles with a small interior pore and a much larger exterior one. Sides with a few cirri. Belly prickly from pectoral to anus, the sides of head and body being naked. Prickles minute. Upper parts of side and back covered with well developed, normal scales, about 25 in a row from gill-opening to eye. They are rough on middle of back, smooth on the sides. The line of demarcation against the spinules of the belly very sharp. Dorsal $2\frac{1}{6}$ in head, anal $2\frac{3}{4}$. Pectoral $2\frac{1}{4}$. Caudal $1\frac{1}{3}$.

Colour: upper parts profusely ornated with dark blotches, suppressing most of the brownish-gray ground colour, becoming more sparsely set on the sides. No conspicuous row of blotches bounding the belly. Two faint, saddle-like figures may be traced among the blotches of back, one behind nape, one around the dorsal.

One specimen of 9.5 cM., probably from Curaçao, perhaps from St. Eustatius, at all events from the lesser Antilles.

It belongs probably to the *T. spengleri*-group.

334. ***Tetrodon (Canthigaster) rostratus* Bloch.**

Tetrodon rostratus, Günther, Catalogue Fishes VIII, p. 303.

Canthigaster rostratus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1741.

" " Evermann & Marsh, Fishes of Portorico, p. 269.

Spheroides asterias, Blosser, Ann. Carn. Mus. VI, 1909, p. 300, pl. XII; juv.

D. 9—10; A. 9.

Head $2\frac{1}{2}$. Eye 3. Snout $1\frac{3}{5}$. Bony interorbital $3\frac{1}{2}$. Dorsal $2\frac{3}{10}$.

Prickles rather variable; reduced to a few behind eyes, or anterior parts of body entirely prickly. Nasal papillae nearer to eye than to tip of snout.

Several specimens from Curaçao (harbour, reefwater, Piescaderabay); Bonaire (reefs); St. Eustatius (Jenkinsbay-Tumbledown Dick bay, not exceeding 10 fathoms), and Venezuela. Length up to $10\frac{1}{2}$ cM.

N.B. The fact that the young are generally covered with two-rooted spinules, the adults being smooth and tuberculate, has probably given rise to misconceptions. — Lowe, Proc. Zool. Soc. 1839, p. 9 gives the pinnal formula D. 9; A. 8; this is certainly nearer to the truth than the formula of Jordan & Evermann and Günther.

Nomen indig.: *Blaas* (L.) (i. e. vesicle, dutch); *toadfish* (W.).

Habitat: Both sides of tropical Atlantic.

335. ***Tetrodon (Cheilichthys) psittacus* Bl. Schn.**

Tetrodon psittacus, Günther, Catalogue Fishes VIII, p. 286.

Cheilichthys psittacus, Steindachner, Ichth. Mitt. II, 1861, p. 141, pl. 4 (Verh. Zool. Bot. Ges., Wien XI).

Colomesus psittacus, Jordan & Evermann, Fishes of N. & M. Am. II, p. 1740.

" " Eigenmann, Mem. Carnegie Museum V, 1912, p. 529.

D. 11; A. 10; C. 11; P. 18.

Head 3 ($3\frac{2}{5}$ in total). Width of head equal to length. Eye (not measuring the heavy, swollen eyelids) $2\frac{3}{4}$ in snout. Interocular width 2. Snout equal to bony interorbital, 3 i. h., the eye being contained 4 in the fleshy interorbital. Dorsal and anal rounded, $2\frac{1}{2}$ i. h. Caudal slightly rounded, 2 i. h.

Colour: six faint crossbars; a very dark-brown area surrounds the gill-opening and pectoral base.

Two fine adult specimens of 28—33 cm. from Paramaribo, Surinam; March; coll. De Weger.

This is apparently the first time that adult specimens are described; it reaches a larger size than any other tetrodont from the West Indies seen by us.

Habitat: river mouths of Guyana and N. Brazil.

DIODONTIDAE.

336. *Diodon hystrix* Linn.

Diodon hystrix, Günther, Catalogue Fishes VIII, p. 306.

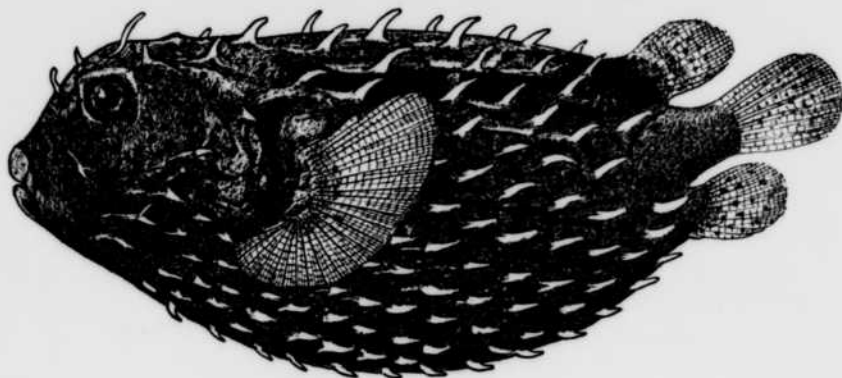
" " Jordan & Evermann, Fishes of N. & M. Am. II, p. 1745.

" " Evermann & Marsh, Fishes of Portorico, p. 271, fig. 80.

A large number of this characteristic fish collected at Curaçao (harbour); Aruba (punta brabo), and St. Eustatius. Length up to 17.5 cm.

Nomen indig: *dsjiendja* (L.); *hedge hog* (W.).

Habitat: tropical seas.

337. *Chilomycterus briareos* nov. specFig. 55. *Chilomycterus briareos* nov. spec. $\times \frac{5}{8}$.

D. 12; A. 12; P. 24.

A fish of a monstrous appearance; head large and massive compared with the more slender body. Nasal tubes cylindrical. Supraorbital slightly raised, with a tentacle. Body armed with strong spines with immense roots (up to 21 mm.); 8 in a submedian row between nasal tentacle and dorsal fin; the one on the middle of the slightly concave forehead and the anterior one of the two supraorbital spines are erectile, their anterior root being small for the purpose. The pair of spines nearest to the dorsal fin meeting with their roots behind the base of that fin. On the caudal peduncle there are immediately before the fin, only an impaired weak dorsal and an anal ossification without a spine, covered by the skin.

Colour: brown; belly too. An oblong black blotch above base of pectoral, extending between 3—4 spines in length and 2 in width. A subtriangular blotch before and around dorsal. Pectoral and dorsal whitish with dark spots at their base; other fins densely spotted with black on a brownish ground-colour.

Seems to be related next to *Ch. antennatus* Cuvier.

One specimen from St. Eustatius. Length 27 cm.

Nomen indig: *hedge hog*.

Named after one of the hecatoncheirs.

Fishes, recorded by Cope from St. Martin
and not found by us.

- Anguilla bostoniensis* (= *Anguilla chrysypa* Raf.).
Gymnothorax nigricans (= *Enchelycore nigricans* Bonnat).
Belone diplotaenia.
Atherina stipes.
Corvina ronchus.
Umbrina broussoneti.
Gerres gula (= *Eucinostomus gula* C.V.).
Blepharichthys crinitus (= *Alectis ciliaris* Bloch).
Pempheris mulleri.
Malacoctenus biguttatus (= *Clinus biguttatus*).
Antennarius marmoratus (= *Pterophryne hystrio*).
Antennaris multiocellatus.
Monacanthus moribundus (= *Balistes forcipatus* Gm.).
Balistes asperrimus (= *Balistes sobaco* Poey).
Monacanthus macrocerus (= *Monacanthus pullus* Ranz).
Aluterus picturatus (= *Aluterus scriptus* Osbeck).
Diodon atinga (= *Chilomycterus atinga* L.).
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List of vernacular names occurring in the preceding account of West Indian fishes.

N.B. Dutch names in dutch orthography, but *u* of papiamento words always to be pronounced as in Spanish.

Aalder	Mugil.
Angel (black)	Pomacanthus arcuatus.
Angel (yellow)	Holacanthus ciliaris.
Angieu	Eleotris, Moringa, Syngnathus.
Ansjovis	Sardinella anchovia.
Balao	Xiphias, Tetrapturus.
Balao di flambeew	Hemirhampus unifasciatus.
Balao tjinquita	Hem. brasiliensis.
Banana	Albula vulpes.
Bandjera espagnol	Pristipoma virginicum.
Barbier	Upeneus martinicus.
Barbier mandienga, Barbier sjouwer	Upeneus maculatus.
Barigonchie	Cyprinodon riverendi.
Barstebers	Lutjanus jocu.
Bers	Lutjanus apodus.
Blaas	Tetrodon.
Bocachito	Cyphosus sectator.
Bocachito pienta	Cyphosus elegans.
Boca largo	Hemirhamphus.
Bolado	Exocoetus.
Bolado di binnenwater	Prionotus, Dactylopterus.
Booneknaap	Pristipoma, Pagrus.
Brand	Blennidae, Gobiidae.
Brandhorovissie	Scorpaena.
Brandhorovissie corra	Scorpaena plumieri.
Briem	Sargus unimaculatus.
Butterfish	Epinephelus punctatus.
Cabeljao	Caranx crumenophthalmus.
Cabricutchie	Gerres cinereus.
Cacubol	Serranus unicolor.
Caja di morto	Ostracion.
Calala	Lutjanus mahogoni.
Calala di hundu	Lutjanus buccanella.
Canoltje	Haemulon melanurum, rimator.
Caranchito	Lutjanus griseus.

Carawao	<i>Peprilus paru.</i>
Cara di cabai, Caricabai	<i>Selene vomer.</i>
Carpeeuw	<i>Gerres.</i>
Carpitan	<i>Lutjanus analis.</i>
Casambitu	<i>Micropteryx.</i>
Catabalie	<i>Abudefduf saxatilis.</i>
Catabalie prètu	<i>Abudefduf concolor.</i>
Cavaly	<i>Caranx bartholomeus.</i>
Cavaly (deepwater)	<i>Caranx chrysos.</i>
Cavaly (green back)	<i>Caranx ruber.</i>
Cavaly (horse eye)	<i>Caranx hippos.</i>
Chierkie bocablanca	<i>Lutjanus vivanus.</i>
Chucho	<i>Rays.</i>
Chapin	<i>Ostracion, Antigonía.</i>
Chupa chupa	<i>Ostracion quadricornis.</i>
Cobbler	<i>Trachinotus.</i>
Cocobelly	<i>Scarus croicensis.</i>
Colbino	<i>Umbrina coroides.</i>
Colebra di awa	<i>Echidna catenata.</i>
Colebra blanco	<i>Chilorhinus svensoni.</i>
Colebra macamba	<i>Ophichthys acuminatus.</i>
Colebra pienta	<i>Ophichthys oculatus.</i>
Colulie, Calala di hindu	<i>Lutjanus buccanella.</i>
Coorco(or)	<i>Haemulon sciurus.</i>
Coorco prètu	<i>Haemulon bonariense, Haemulon parra.</i>
Corcoba	<i>Caranx latus.</i>
Corra	<i>Lutjanus analis var.</i>
Corra largo	<i>Lutjanus synagris.</i>
Corra loomba prètu	<i>Lutjanus.</i>
Corra wowo prètu	<i>Apogon binotatus.</i>
Djampao	<i>Epinephelus bonaci.</i>
Djentikatchoo	<i>Cossyphus rufus, Xyrichthys psittacus.</i>
Djenti maisjie	<i>Calamus bajonado.</i>
Djiendja	<i>Diodon, Chilomycterus.</i>
Doctor (blue)	<i>Acanthurus coeruleus.</i>
Doctor (yellow)	<i>Acanthurus bahianus.</i>
Dolphin	<i>Coryphaena equisetis.</i>
Dradu	<i>Coryphaena hippurus.</i>
Fleerchie	<i>Exocoetus.</i>
Fototo	<i>Ostracion quadricornis.</i>
Fry	<i>Engraulis.</i>
Gars	<i>Belone.</i>
Gatu	<i>Epinephelus adscensionis.</i>
Gatu prètu	<i>Epinephelus guttatus.</i>
Geepie	<i>Belone.</i>
Goatfish	<i>Upeneus martinicus.</i>
Goatfish (spotted)	<i>Upeneus maculatus.</i>
Goudvissie	<i>Apogon pigmentarius.</i>
Granmel	<i>Epinephelus ruber.</i>

Grasteltje	<i>Lutjanus chrysurus.</i>
Grouper	<i>Epinephelus</i> spp.
Grunt	<i>Haemulon carbonarius, Haemulon sciurus.</i>
Gutu barica geel	<i>Sparisoma xystrodon.</i>
Gutu berde	<i>PlatyGLOSSUS radiatus.</i>
Gutu blanco	<i>Sparisoma flavescens.</i>
Gutu blauw	<i>Scarus coeruleus, Scarus punctatulus.</i>
Gutu corra	<i>Sparisoma abildgaardi.</i>
Gutu garnaaltje	<i>Scarus croicensis.</i>
Gutu kedebe	<i>Scarus coeruleus.</i>
Gutu ketekete	<i>Sparisoma aurofrenatus.</i>
Gutu peetsch	<i>Scarus croicensis.</i>
Gutu préto	<i>Pseudoscarus guamaica.</i>
Gutu rabugai	<i>Sparisoma abildgaardi.</i>
Gutu rooibekkie	<i>Sparisoma distinctum</i>
Habon	<i>Rhypticus.</i>
Hamlet	<i>Epinephelus afer.</i>
Haring	<i>Opisthonema thrissa.</i>
Harmanchie	<i>Albula vulpes.</i>
Hedge-hog	<i>Diodon, Chilomycterus.</i>
Hind (red)	<i>Epinephelus guttatus.</i>
Hind (rock)	<i>Epinephelus adscensionis.</i>
Hogfish	<i>Lachnolaimus.</i>
Jacob peper	<i>Epinephelus striatus.</i>
Jack	<i>Caranx punctatus.</i>
Jager	<i>Caranx ruber.</i>
Kandeltje	<i>Holocentrus adscensionis.</i>
Kandeltje debajo	<i>Myripristis jacobus.</i>
Kandeltje stienkie	<i>Priacanthus cruentatus.</i>
Katoenklopper	<i>Gutu.</i>
Kleinvissie blauw	<i>Acanthurus coeruleus.</i>
Kleinvissie blanco	<i>Acanthurus hepatus.</i>
Kleinvissie préto, or Kleinvissie geel	<i>Acanthurus bahianus.</i>
Konnevees (= kingfish)	<i>Cybium cavalla.</i>
Ladronchie	<i>Pomacentrus analis.</i>
Ladronchie blauw	<i>Pomacentrus leucostictus.</i>
Ladronchie préto	<i>Pomacentrus fuscus.</i>
Leatherjack	<i>Caranx.</i>
Leguana di awa	<i>Saurus intermedius.</i>
Lionfish	<i>Scorpaena plumieri.</i>
Macambie	<i>Elops saurus.</i>
Mamelootchie	<i>Haemulon melanurum.</i>
Marsbango	<i>Caranx crumenophthalmus.</i>
Matchurie	<i>Rivulus marmoratus.</i>
Maulo	<i>Caranx punctatus, Caranx sanctae helenae.</i>
Meru	<i>Epinephelus morio.</i>
Mulato	<i>Cybium regale.</i>
Ocean cobbler	<i>Ephippus faber.</i>
Okvees (hogfish)	<i>Lachnolaimus.</i>

Okvees geel, or Okvees préto	<i>Serranus unicolor.</i>
Oldwife	<i>Balistes, Monacanthus.</i>
Bastard oldwife	<i>Tetrodon (Canthigaster).</i>
Olitu	<i>Epinephelus afer.</i>
Oromanie	<i>Echidna catenata.</i>
Pamper (= pampano)	<i>Trachinotus glaucus.</i>
Pargo	<i>Lutjanus aya.</i>
Parrotfish	<i>Platy glossus cynocephalus.</i>
Parrotfish (blue)	<i>Platy glossus radiatus.</i>
Parrotfish (green)	<i>Pseudoscarus guacamaia.</i>
Parrotfish (red)	<i>Sparisoma aurofrenatum.</i>
Pega	<i>Echeneis.</i>
Pega di barranca	<i>Callionymus pauciradiatus.</i>
Pega pega	<i>Salarias atlanticus.</i>
Picuda (picur)	<i>Sphyræna picuda.</i>
Piesca-raay	<i>Malacanthus plumieri.</i>
Piesca bonita = Piesca di oro	<i>Serranus tabacarius.</i>
Piesca di plata	<i>Sardinella sardina.</i>
Piesca di santu	<i>Platy glossus microstomus.</i>
Piesca di spons	<i>Serranus tigrinus.</i>
Piesjie porco	<i>Monacanthidae.</i>
Piesjie porco fluit	<i>Pseudomonacanthus amphioxus.</i>
Piesjie sjee ?	<i>Cybbium maculatum.</i>
Pieskeetchie	<i>Atherina.</i>
Pietch pompuna	<i>Platy glossus spp.</i>
Pietchie blaw	<i>Platy glossus & Julis spp.</i>
Pietchie geel	<i>Decodon puellaris.</i>
Pietchie di hundu	<i>Xyrichtys rosipes.</i>
Pietchie loomba préto	<i>Platy glossus cyanocephalus.</i>
Pietchie pienta	<i>Julis nitida.</i>
Pilotfish	<i>Abudefduf saxatilis.</i>
Popo	<i>Exocoetus mesogaster.</i>
Porgy	<i>Calamus.</i>
Potsnapper	<i>Lutjanus synagris.</i>
Purunchie pretu	<i>Epinephelus punctatus.</i>
Purunchie cabrito	<i>Epinephelus stellatus.</i>
Raansla	<i>Gerris cinereus.</i>
Rey di chapin	<i>Ostracion tricornis.</i>
Rey di corra	<i>Paranthias furcifer.</i>
Rey di ladronchie	<i>Eques lanceolatus.</i>
Rey di piesjie porco	<i>Eques acuminatus.</i>
Rey di tjamba	<i>Holacanthus ciliaris.</i>
Rey di pandu	<i>Microspathodon.</i>
Red man	<i>Holocentrus adscensionis.</i>
Ronco	<i>Micropogon.</i>
Rooibekkie	<i>Haemulon.</i>
Round robin	<i>Caranx punctatus.</i>
Runner	<i>Caranx chrysos.</i>
Sabernetje	<i>Lutjanus auro-rubens.</i>

Sand-eater	Umbrina coroides.
Scad	Caranx punctatus.
Schobbejak	Gerridae.
Sea-bat	Malthe.
Sill (roundhead-)	Cryptotomus.
Silverfish	Umbrina lefroyi.
Snapper	Lutjanus.
Snapper (gray)	Lutjanus griseus, dentatus.
Snoek	Sphyræna picuda.
Snoek (ronde)	Sphyræna picudilla.
Soapfish	Rhypticus.
Sobra di dioos	Pleuronectidae.
Sjeeuw	Alphestes chloropterus.
Sprat	Clupoids (small).
Steltje	Chromis.
Sjeeuw	Epinephelus afer.
Stingray	Trygon.
Swede	Holacanthus tricolor.
Taki-taki	Haemulon chrysargyreus.
Tapa-tapa	Pleuronectidae.
Tapa-conchie	Batrachus.
Tjamba	Chaetodon, Holacanthus, Pomacanthus.
Tjamba blanco	Chaetodon ocellatus.
Tjamba geel	Chaetodon striatus.
Tjamba prètu	Pomacanthus paru.
Tienponder	Albula vulpes, Elops.
Toadfish	Tetrodon.
Toctoc	Haemulon melanurum.
Tribon	Sharks.
Udieu	Caulolatilus, Chlorinemus.
Warda costa	Gerridae.
Whiting	Malacanthus.
Yellow-tail	Lutjanus chrysurus.
Zumbi-vees	Antennaridae



PART II.

Marine fishes of tropical West Africa.



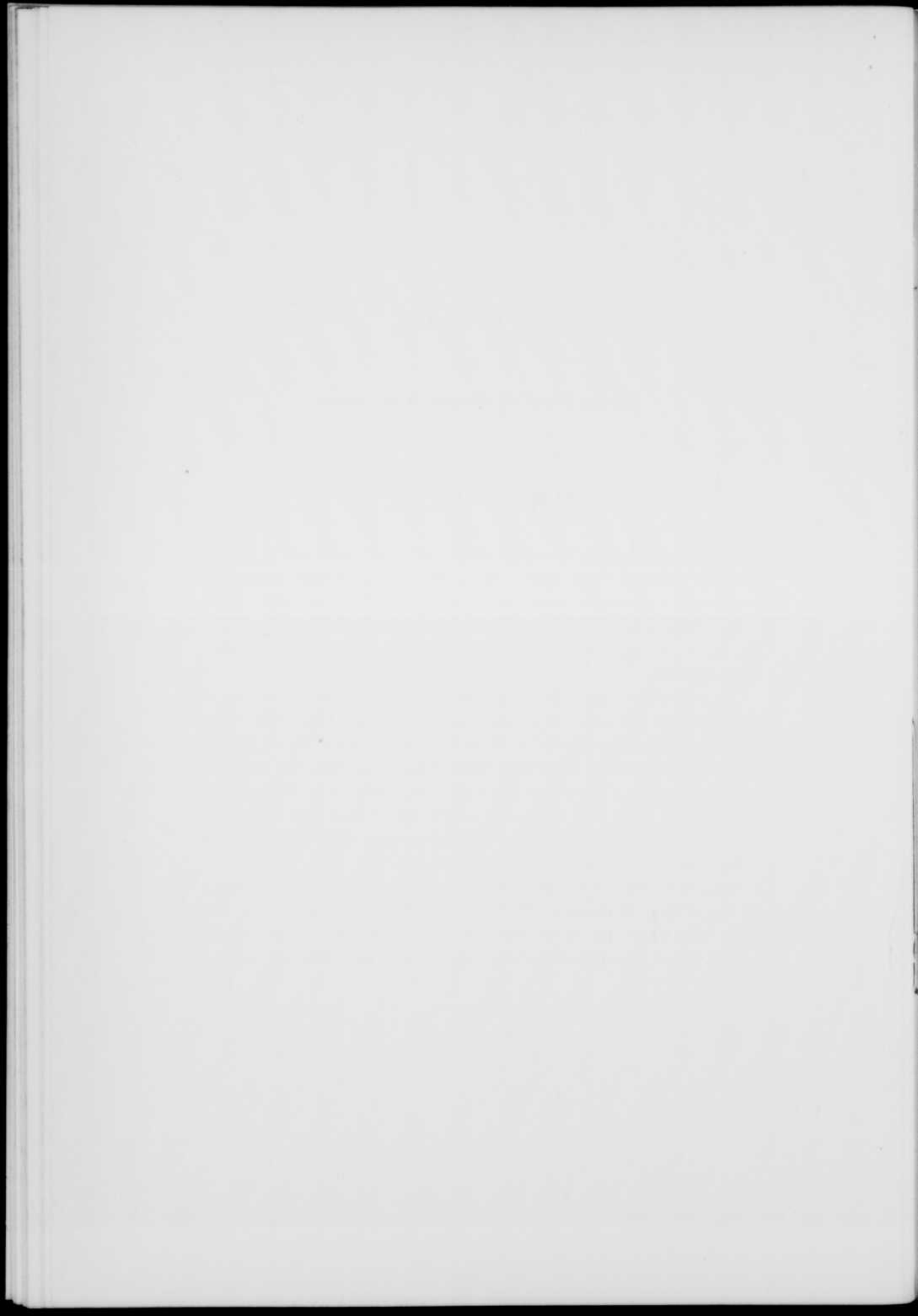
PART II.

Marine fishes of tropical West Africa.

PREFACE.

This part contains a compilatory, systematic account of marine fishes of Tropical West Africa, from the Canary islands to Angola, (compared with the fauna of the American side of the Atlantic Ocean), with remarks upon a fine collection from those regions made by Mr. F. P. Vermeulen with the Dutch trawler „Holland VII” April—August 1906.

The attention paid to the neighbourhood of Cape Blanco, especially by the French, but also by the Belgians and Dutch is justified by the wonderful richness of the said coast in edible fishes. Up to date however their remoteness from civilised centres has been the great obstacle to a rational working of them, but it is to be expected that before long the universal shortness of food will direct our trawlers to the Banc d'Arguin, and the present study is especially dedicated to the Ymuiden ship-owners with the wish, that it may help them in considering the possibilities of exploitation. The museum of the Zoölogical Society „Natura Artis Magistra” and the University of Amsterdam is indebted to Mr. Vermeulen for his careful collecting of fishes and evertbrates, several of which are new to science.



Tropical West Africa ⁽¹⁾.

NOTIDANIDAE.

1. *Notidanus cinereus* Cuv.

Heptanchus cinereus, Müll. Henle, p. 81, pl. 35 (2).

Notidanus cinereus, Günther, Catalogue Fishes VIII, p. 398.

" " Rochebrune, Act. Soc. Linn. Bordeaux, XXXVI, Série 4, Tome VI, 1882, p. 462, Senegamb.

Heptranchias perlo, Garman, Mem. Mus. Comp. Zool. Harvard College XXXVI, 1913, p. 21.

Also known from the American coast.

SCYLLIDAE.

2. *Scyllium canicula* Cuv.

Scyllium canicula, Günther, Catalogue Fishes VIII, p. 402.

" " Osorio, Jorn. Scienc. Math. Phys. Nat. Acad. Scienc. Lisboa, II^a Serie, II, Tomo V, 1898, p. 200, Dahomey, Anno Bom.

Catulus caniculus, Garman, op. cit. p. 72.

3. *Scyllium stellare* (L.).

Scyllium stellare, Günther, Catalogue Fishes VIII, p. 402.

" " Pellegrin, Bull. Soc. Zool. XXXVIII, 1912, p. 258, Marocco.

Catulus stellaris, Garman, op. cit. p. 75.

Vermeulen-expedition: Cape Blanco.

(1) Localities of habitat. out of the Atlantic are not cited.

(2) For abbreviations see list of literature at the end.

4. *Ginglymostoma cirratum* M. H.

Ginglymostoma cirratum, Günther, Catalogue Fishes VIII,
p. 408.

" " Osorio, Jorn. Lisboa (Ser. II), V,
p. 200, Capeverde (1).

" " Garman, op. cit. p. 54.

Also known from the American coast.

CARCHARIIDAE.

5. *Carcharias (Scoliodon) acutus* Rüpp.

Carcharias acutus, Günther, Catalogue Fishes VIII, p. 358.

" (*Scoliodon*) *acutus*, Steindachner, Sitz.ber. Ac.
Wien LXI, p. 575, Senegal.

Scoliodon palasorrah, Garman, op. cit. p. 111.

6. *Carcharias (Scoliodon) walbeemhi* Blhr.

Carcharias walbeemhi, Günther, Catalogue Fishes VIII, p. 359.

" (*Scoliodon*) *walbeemhi*, Osorio, Jorn. Lisboa (II^a Ser.)
V, p. 200, St. Thomé, Capeverde.

Scoliodon walbeemhi, Garman, op. cit. p. 112.

7. *Carcharias (Scoliodon) terraenovae* Richards.

Carcharias terraenovae, Günther, Catalogue Fishes VIII, p. 360.

Scoliodon terraenovae, Garman, op. cit. p. 115, pl. 2.

Carcharias eumeces, Pietschmann, Jahrb. Nassau. Ver. Naturk.
1913, p. 172 (Cameroon).

Also from American coast.

One female in the Coll. Vermeulen, with a few teeth in both jaws very weakly serrate. Length of anal base little more than $\frac{1}{3}$ the distance to front of ventral. Caudal $\frac{37}{8}$ in total, its depth $2\frac{1}{4}$ in its length. Length 57.5 cm. We have compared the specimen with our West Indian ones and find no specific difference. Pietschmann gives a very accurate description (except of the precise number of teeth) which was not yet known to Garman.

(1) Abbrev.: Cape de Verde.

8. **Carcharias (Aprionodon) isodon** Dum.

Carcharias isodon, Günther, Catalogue Fishes VIII, p. 361; Rochebrune, Act. Soc. L. Bord., XXXVI, Série 4, VI, p. 41, Senegambia.

Both coasts of Atlantic.

9. **Carcharias (Prionodon) falciformis** M. H.

Carcharias (Prionodon) falciformis, Steind., Denkschr. Wien, XIV, p. 14, Gorea.

Carcharinus falciformis, Garman, op. cit. p. 129.

Both coasts of Atlantic.

10. **Carcharias (Prionodon) glaucus** L.

Carcharias glaucus, Günther, Catalogue Fishes VIII, p. 364; Osorio, Jorn. Lisboa, II^a Ser. V, p. 200, St. Thomé.

Galeus glaucus, Garman, op. cit. p. 145, pl. 3.

Both coasts of Atlantic.

11. **Carcharias (Prionodon) obscurus** Lesueur.

Carcharias obscurus, Günther, Catalogue Fishes VIII, p. 366.

Prionodon obvelatus, Valenciennes, Iles Canaries, Poissons, p. 103, Canaries.

Carcharinus obscurus, Garman, op. cit. p. 130.

Both coasts of Atlantic.

12. **Carcharias (Prionodon) leucas** M. H.

Carcharias leucas, Rochebrune, Actes Soc. L., Bord. t. c. p. 42, Senegamb.

„ *lamia*, Günther, Catalogue Fishes VIII, p. 372.

„ *commersonii*, Garman, op. cit. p. 140.

Both coasts of Atlantic.

13. **Carcharias (Prionodon) lamia** Risso.

Carcharias lamia, Günther, Catalogue Fishes VIII, p. 372; Steind., Denkschr. Wien XLIV, p. 20, Senegambia.

Both sides of Atlantic.

14. **Carcharias (Prionodon) melanopterus M. H.**

Carcharias melanopterus, Günther, Catalogue Fishes VIII,
p. 369; Rochebrune, Act. Soc. L.
Bord. t. c. p. 42, Senegambia.
" " Garman, op. cit. p. 134.

15. **Carcharias (Prionodon) limbatus M. H.**

Carcharias limbatus, Günther, Catalogue Fishes VIII, p. 373;
Rochebrune, Act. Soc. L. Bord. t. c. p. 42,
Capeverde.
Carcharinus limbatus, Garman, op. cit. p. 127.
Both sides of Atlantic.

16. **Galeocerdo tigrinus M. H.**

Galeocerdo tigrinus, Günther, Catalogue Fishes VIII, p. 378;
Rochebrune, Act. Soc. L. Bord. t. c. p. 43, Senegambia.
Galeocerdo arcticus, Garman, op. cit. p. 148.
Both sides of Atlantic.

17. **Galeus canis M. H.**

Galeus canis, Günther, Catalogue Fishes VIII, p. 379; Roche-
brune, Act. Soc. L. Bord. t. c. p. 43, Senegambia.
Eugaleus galeus, Garman, op. cit. p. 153.
Both sides of Atlantic.

18. **Mustelus laevis Rondel.**

Mustelus laevis, Günther, Catalogue Fishes VIII, p. 385; Pietsch-
mann, Jahrb. Nassau, Ver. Natk. 1913, p. 176, Bibundi.
Galeorhinus laevis, Garman, op. cit. p. 176.

Collected by Mr. Vermeulen off the coast of Rio d'ouro:

a. Male of 70 cm. Width of mouth nearly equal to length of
praeoral snout. Hind margin of tail scarcely darkened.

b. 9 embryos, perhaps belonging to another, still undescribed
african species: Distance between angles of mouth $1\frac{2}{3}$ — $1\frac{3}{4}$ in prae-
oral snout (in this respect not agreeing with american embryos
of the species). Diameter of orbit smaller than praenarinal part of
snout. Teeth agreeing with those described of *M. laevis*; the points
of the upper ones rather distinct, those of the lower ones obsolete.

Base of second dorsal $1\frac{1}{3}$ - in that of first. Height of first dorsal nearly equal to its base.

Colour: Grayish on back with a sharp limit to the pale ventral side. Both dorsals narrowly edged with black at tip. All the specimens have a typical black blotch on tail, occupying $\frac{2}{5}$ ^{ths} of the hinder margin, fading cranial. Pectoral and ventral coloured on *both* sides, with a pale edge. Length 28.5-31 cm.

Both sides of Atlantic.

SPHYRNIDAE.

19. *Zygaena malleus* Shaw.

Zygaena malleus, Günther, Catalogue Fishes VIII, p. 381.

Cestracion zygaena, Garman, op. cit. p. 157.

Vermeulen-expedition: Gorrei, Rio d'ouro, August.

Cosmopolitic.

20. *Zygaena leeuwenii* Griff.

Zygaena leeuwenii, distinct from *Z. malleus* after Rochebrune, Act. Soc. L. t. c. p. 44, Senegambia.

21. *Zygaena tudes* Val.

Zygaena tudes, Rochebrune, Act. Soc. L. Bordeaux, t. c. p. 45, Senegambia.

" " Osorio, Jorn. Lisboa, II^a Series, III, p. 182, St. Thomé.

Cestracion tudes, Garman, op. cit. p. 159.

Both sides of Atlantic.

LAMNIDAE.

22. *Lamna spallanzanii* Bonaparte.

Lamna spallanzanii, Steind., Sitz.ber. Wien, C. p. 363, Canaries.

Isurus oxyrinchus, Garman, op. cit. p. 37.

Both sides of Atlantic.

23. *Odontaspis americanus* Mitch.

Odontaspis americanus, Günther, Catal. Fishes VIII, p. 392,

" *taurus*, Rochebrune, op. cit. p. 46, Senegambia.

Vermeulen-expedition: Gorrei: Rio d'ouro, August.

One specimen of 1 M. length.

Nomen vulgare: *Sarda*.

Both sides of Atlantic.

24. **Carcharodon rondelettii** M. H.

Carcharodon rondelettii, Günther, Catalogue Fishes VIII, p. 392; Rochebrune, Act. Soc. L. Bordeaux, t. c. p. 46, Senegambia.

„ *carcharias*, Garman, op. cit. p. 32.

Both sides of Atlantic.

25. **Alopias vulpes** L. Gmel.

Alopias vulpes, Günther, Catalogue Fishes VIII, p. 393.

Vulpecula marina, Garman, op. cit. p. 30, pl. 7.

Known from Madeira and the Cape of good Hope; no doubt also occurring near the coasts between them.

Both sides of Atlantic.

SPINACIDAE.

26. **Acanthias blainvillii** Risso.

Acanthias blainvillii, Osorio, Jorn. Lisboa, II^a Series, V, p. 201, Dahomey, Anno Bom.

Squalus fernandinus, Garman, op. cit. p. 195.

Both coasts of Atlantic.

27. **Centrophorus uyatus** M. H.

Acanthias uyatus, Rochebrune, Faune Sénégalamb., op. cit. p. 47.

Centrophorus uyatus, Garman, op. cit. p. 197.

28. **Centrophorus granulosus** M. H.

Centrophorus granulosus, Günther, Catalogue Fishes VIII, p. 420; Jordan & Gunn, Proc. Ac. Philadelphia 1898, Canaries; Garman, op. cit. p. 201.

29. **Spinax pusillus** Lowe

Spinax pusillus, Günther, Catalogue Fishes VIII, p. 425, Madeira, Cuba.

Elmopterus pusillus, Garman, op. cit. 228.

Undoubtedly occurring at the Canaries, though not yet reported from there.

Both sides of Atlantic.

30. **Echinorhinus spinosus** L.

Echinorhinus spinosus, Günther, Catalogue Fishes VIII, p. 428.

" *brucus*, Garman, op. cit. p. 243.

Both coasts of Atlantic.

31. **Isistius brasiliensis** Gill.

Isistius brasiliensis, Günther, Catalogue Fishes VIII, p. 429; Rochebrune, Faune Sénégal., op. cit. p. 48; Garman, op. cit., p. 238.

Both sides of Atlantic.

RHINIDAE.

32. **Squatina squatina** L.

Squatina angelus, Valenciennes, Iles canaries, p. 102.

Rhina squatina, Günther, Catalogue Fishes VIII, p. 430; Garman, op. cit. p. 251.

Both sides of Atlantic.

33. **Squatina africana** Regan.

Squatina africana, Regan, Ann., Mg., N. Hist., Série 8, XV, p. 124, Lagos.

One fine female specimen collected by Mr. Vermeulen at Gorrei. Interspiracular width = interocular width.

Dorsal ossifications 4—7-carinate. Paired fins bordered by a broad band of them; that of the pectoral about $\frac{1}{3}$ of the width of the fin. In both „axils” of the fin extra rough patches, the posterior largest, leaving a smooth streak against the outer band of about $\frac{1}{6}$ th the width of the fin. Abdomen smooth. Width of tail $3\frac{2}{3}$ in total length. Base of pectoral $\frac{1}{2}$ its extreme length.

Colour: Brown, numerous white spots, the larger ones symmetrically arranged. A few dark specks on front of head and pectorals; 4 conspicuous darker blotches on each side of tail, symmetrically placed.

Length 1 M.; an exceedingly heavy and monstrous fish, called *Pezzidianchi* by the fishermen of the Canaries.

The uterus contained about ten embryos, the eggs being as large as a man's fist. The coloration of a young of 11 cM. is very different from that of its mother, the smooth skin being cream-yellow with large brown blotches all over the body and fins. Of these, 6 pairs of transverse blotches, equidistant, near the median line, are most distinct.

PRISTIDAE.

34. *Pristis perrotteti* M. H.

Pristis perrotteti, Günther, Catalogue Fishes VIII, p. 436;
Rochebrune, Faune Sénégal., op. cit. p. 49.

„ *microdon*, Garman, op. cit. p. 265.

Both sides of Atlantic.

35. *Pristis pectinatus* Lathan.

Pristis pectinatus, Günther, Catalogue Fishes VIII, p. 437;
Osorio, Jorn. Lisboa, II^a Serie, II, p. 52, Angola;
Garman, op. cit. p. 262.

„ *occa*, Rochebrune, Faune Sénégal., op. cit. p. 49.

Both coasts of Atlantic.

36. *Pristis antiquorum*.

Pristis antiquorum, Günther, Catalogue Fishes VIII, p. 438;
Rochebrune, Faune Sénégal., op. cit. p. 49.

„ *pristis*, Garman, op. cit. p. 264.

Both sides of Atlantic.

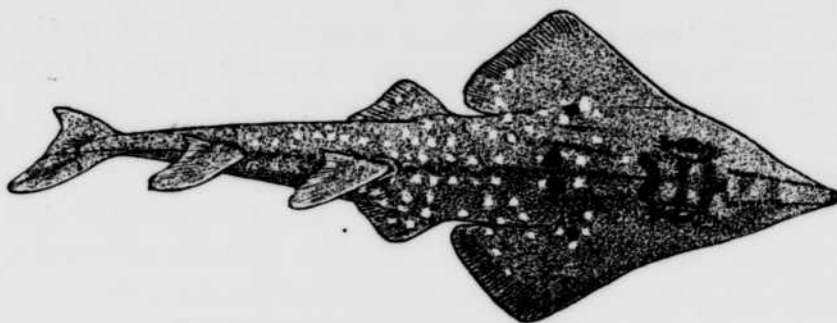
RHINOBATIDAE.

37. *Rhynchobatus djiddensis* Rupp.

Rhynchobatus djiddensis, Günther, Catalogue Fishes VIII,
p. 441; Rochebrune, Faune Sénégal., op. cit. p. 50; Garman,
op. cit. p. 268.

38. *Rhynchobatus atlanticus* Regan.

Rhynchobatus atlanticus, Regan, Ann. Mag. Nat. Hist. (8), XV,
p. 124, Lagos.

39. *Rhynchobatus lübberti* Ehrenb.Fig. 56. *Rhynchobatus lübberti* Ehrenb. $\times \frac{1}{5}$.

Rhynchobatus lübberti, Ehrenbaum, Fischerbote VI, 1914, p. 403, Cameroon (fine figure).

2 specimens in the collection-Vermeulen from the coast of Senegambia. Width of disk in female $\frac{5}{7}$, in male $\frac{4}{5}$ in length to anal opening; snout angle less than 60° . Point of junction of rostral cartilages at $\frac{2}{5}$ th of the length from tip of snout to orbit. Mouth slightly bent forward in the middle, otherwise straight; the width between outer corners of labial folds is contained $2\frac{2}{9}$ in female, $2\frac{2}{3}$ in male in the praeoral snout.

Distance between nostrils $\frac{2}{3}$ th of their own width. Anterior narinal lobe small, the inner section continued only $\frac{1}{3}$ in male, $\frac{2}{7}$ th in female of the distance to inner edge of nostril. Inner section of posterior valve much the broadest. Spiracles large, with 2 folds, the outer being slightly larger.

Spines: Prominent, compressed spines on the median line; orbital ridges and rostral ridges; a pair on tip of snout. 2 medial rows of 8 spines and an extra outer pair on shoulder region. Dorsal fins equal; the base of the first ends on a level with the angles of ventral fin.

Colour: Back beautiful mousegray with black crossbars and paler areas in the interorbital region. The white edge of the snout is continued caudad on pectorals. A pair of conspicuous, inky blotches near the median line on a level with pectoral angles. The posterior region (behind pectoral angles) spotted with very sharply defined, circular white spots, symmetrically arranged, extending on pectoral and tail up to 2nd dorsal. A large, jetblack blotch covers the lower side of the snout. Female coloured still more vividly than male, same pattern.

Length of male: 59 cM.; of female: 58 cM.

Nomen vulgare: *Guitarra*.

40. **Rhinobatus halavi** Forsk.

Rhinobatus halavi, Günther, Catalogue, Fishes VIII, p. 442; Rochebrune, Faune Sénégalamb., loc. cit. p. 50; Osorio, Angola, Garman, op. cit. p. 275.

41. **Rhinobatus granulatus** Cuv.

Rhinobatus granulatus, Günther, Catalogue Fishes VIII, p. 443; Osorio, Jorn. Lisboa, II^a Serie, V, p. 201; Capeverde, Garman, op. cit. 272.

42. **Rhinobatus undulatus** Olfers.

Rhinobatus undulatus, Günther, Catalogue Fishes VIII, p. 444;

Osorio, Jorn. Lisboa, II^a Serie, V, p. 201, Dahomey.

„ *cemiculus*, Troschel, Arch. Nat. Gesch., 1866, I, p. 238; Capeverde, Rochebrune, Faune Sénégalamb., loc. cit. p. 51.

„ *percellens*, Garman, op. cit. p. 278.

Both sides of Atlantic.

43. **Rhinobatus columnae** M. H.

Rhinobatus columnae, Günther, Catalogue Fishes VIII, p. 447;

Osorio, Angola; Steind., Denks. Wien

XLV, p. 14; Gorea; Pellegrin, Annales

Institut Océanogr. Monaco VI, 4, p. 7.

(Lévrier, Dakar, Gabon.)

„ *rhinobatus*, Garman, op. cit. p. 270.

Two specimens in the collection-Vermeulen from Cape Blanco. Width of disk less than length to anal opening. Praeorbital snout twice width of the toothed part of mouth, $3\frac{2}{3}$ in interorbital space. Internarinal width equal to longest diameter of eye, the narine-folds *not nearly meeting*. The distance from outer corner of narine to border of disk equals the diameter of marine. Tubercles nearly obsolete, best developed on orbital ridges.

Length 82—83 cm.

Nomen vulgare: *Guitarra*.

44. **Rhinobatus rarus** Garman.

Rhinobatus rarus, Garman, Bull. Mus. Comp. Zoöl. Harvard, LI, 1908, p. 253 (Gulf of Guinea).

RAJIDAE.**45. *Raja maderensis* Lowe.**

Raja maderensis, Valenc., Iles Canar., p. 100, pl. XXV; Günther, Catalogue Fishes VIII, p. 459; Osorio, Jorn. Lisboa, II^a Serie, V, p. 201; Dahomey, Anno Bom; Garman, op. cit. p. 325.

46. *Raja clavata* L.

Raja clavata, Günther, Catalogue Fishes VIII, p. 456; Jordan & Gunn, Proc. Philadelphia, 1898, p. 339, Canaries; Garman, op. cit. p. 326.

47. *Raja undulata* Lacep.

Raja undulata, Günther, Catalogue Fishes, p. 459; Vinciguerra, Atti. Soc. Ital. Sci. Nat. XXXIV, p. 301, Canaries.

" *picta*, Garman, op. cit. p. 318.

1 Specimen collected by Mr. Vermeulen at the coast of Rio d'Ouro. Teeth: 42 rows of blunt teeth. Snout white as in *R. punctata*. One female.

Not yet known so far southward.

48. *Raja asterias* M. H.

Raja asterias, Günther, Catalogue Fishes VIII, p. 460.

" *oculata*, Garman, op. cit. p. 319.

1 Specimen collected by Mr. Vermeulen at the coast of Rio d'Ouro. It was not yet known farther southward than Portugal.

49. *Raja miraletus* L.

Raja miraletus, Günther, Catalogue Fishes VIII, p. 460.

" " Pellegrin, Ann. Monaco VI, 4, p. 7; Cape Blanco, Capeverde.

Several specimens in the collection-Vermeulen from same locality.

50. *Platyrrhina schoenleinii* M. H.

Platyrrhina schoenleinii, Steind. Denkschr. Wien, XLIV, p. 50; Senegambia; Pellegrin, Ann. Monaco VI, 4, p. 8; Regan, Ann. Mag. N. Hist. (8) XV, p. 125, Lagos.

In the collection-Vermeulen: Specimen from Cape Blanco.
Nomen vulgare: *Raja de Altura*.

TORPEDINIDAE.

51. *Torpedo hebetans* Lowe.

Torpedo hebetans, Günther, Catalogue Fishes VIII, p. 449;
Osorio, Jorn. Lisboa, II^a Serie, V, p. 201, St. Thomé;
Ehrenbaum, Fischerbote VI, 1914, p. 405, Cameroon.
" *nigra*, Rochebrune, Faune Sénégalamb., loc. cit. p. 51.
Narcacion nobilianus, Garman, op. cit. p. 310.

Collection-Vermeulen: One male from Cape Blanco.

Length of disk (to anal opening) $1\frac{2}{9}$ in width. Spiracles with 2 distinct flat tubercles on posterior margin. Lateral lobule of anterior nasal valve scarcely differentiated. Teeth $\frac{30}{28}$.

Colour: Brownish violet; dorsal fins with their posterior margins white. Ventral side white with dusky borders.

Length: 23 cm.

Nomen vulgare: *Trembladera*.

There occur in the collection several specimens, which deserve perhaps to be separated from the species as a distinct colour variety. Specimens of this kind have probably been considered by the authors as *T. narce* without ocelli. Comparing them, however, with a *T. narce* of the same size, we find here the spiracular papillae reduced to shanty fleshy tubercles, whereas in *T. narce* they are still present as slender tentacles. The chief proportions are also a little different; besides, we find no intermediate forms in coloration.

Length of disk $1\frac{1}{10}$ — $1\frac{1}{6}$ in width.

Teeth $\frac{26-32}{24-30}$.

Skin very smooth.

Colour: A pale peau-de-suède-brown, the youngest being ornated with a few white dots, the others absolutely plain without any specks or variegations.

Length of the specimens (all males) 17—31 cm.

52. *Torpedo narce* Nardo.

Torpedo narce, Günther, Catalogue Fishes VIII, p. 449;
Steind., Denkschr., Wien, XLIV, p. 50, Sénégalamb.; Osorio,
Jorn. Lisboa, II^a Serie, V, p. 201, Rolas; Pellegrin, Ann. Monaco,
VI, 4, p. 8.

Narcacion torpedo, Garman, op. cit. p. 306.

Collection-Vermeulen: specimens from Cape Blanco and St. Louis. In the specimens of 16 cM. the spiracular fringes are still evident, in a specimen of 41 cM. they have disappeared.

Length of disk from $1\frac{1}{3}$ in young to $1\frac{1}{5}$ à $1\frac{2}{11}$ in older specimens.

Colour: All the specimens have the typical 5 ocelli. Length 16—41 cM.

Nomen vulgare: *Trembladera africana*.

53. ***Torpedo mackayana*** nov. spec.

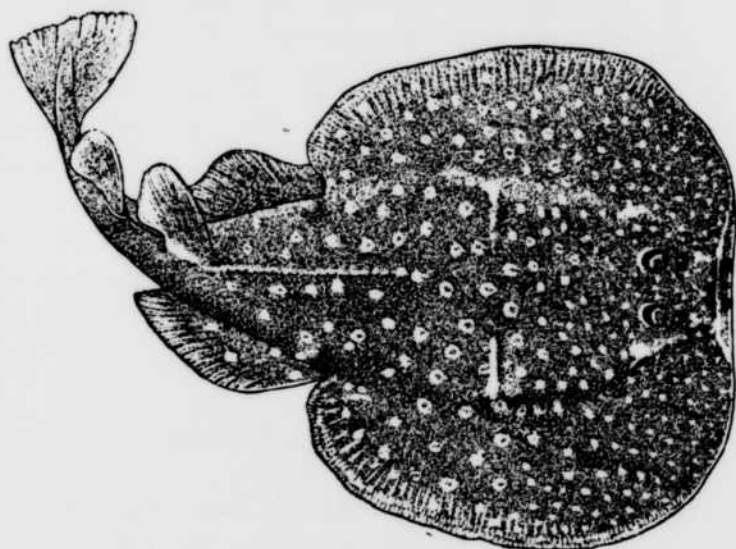


Fig. 57. *Torpedo mackayana* nov. spec. $\times \frac{1}{3}$.

Collected by Mr. Vermeulen at the coast of Senegal, August. Length of disk $1\frac{2}{13}$ in width, its form being more or less rectangular, not subcircular as *T. hebetans*; emarginate in front.

Teeth $\frac{37}{35}$. Spiracles much as in *T. hebetans*, measuring half of the interspace, but without the rudimentary tubercles occurring in that species. *Posterior half of pectoral margin bordered by a double row of small white papillae, partly spinous.* Dorsal with its anterior half opposite to base of ventral.

Colour: dark brownish-violet. Back densely spotted with white, the spots beginning very small on snout and increasing to the size of the eye backward, behind the spiracles taking the shape of rings. There are 14 of these rings in a transverse row as well

as in a longitudinal series between spiracles and first dorsal. Posterior border of vertical fins with a broad pale margin.

Length 34 cm.

Nomen vulgare: *Trembladera*.

Named after the Hon Bar. Mackay, one of the promoters of the expedition.

54. *Torpedo marmorata* Risso.

Torpedo marmorata, Valenc., Iles Canar., p. 101; Günther, Catalogue Fishes VIII, p. 450; Steind., Denkschr. Wien, XLIV, p. 50, Gorea; Rochebrune, Faune Sénégal., op. cit. p. 29; Pellegrin, Ann. Monaco, VI, 4, p. 8.

" *trepidans*, Valenc., Iles Canar., p. 101, pl. XXIII.

TRYGONIDAE.

55. *Urogymnus asperrimus* Bl. Schn.

Urogymnus asperrimus, Günther, Catalogue Fishes VIII, p. 471.

Anacanthus africanus, Bleeker, Poissons Guinée, p. 6.

Urogymnus africanus, Rochebrune, Faune Sénégal., p. 53.

56. *Trygon hastata* Storer.

Trygon thalassia, Günther, Catalogue Fishes VIII, p. 477; Rochebrune, Faune Sénégal., p. 53.

Trygon ukpam, J. Alex Smith, Proc. R. Ph. Soc. Edinb. 1859, p. 64; Günther, Catalogue Fishes VIII, p. 480 (Old Calabar).

Dasybatus marinus, Garman, op cit. p. 382.

Both sides of Atlantic.

57. *Trygon spinosissima* Dum.

Trygon spinosissima, Rochebrune, Faune Sénégal., op. cit. p. 53 (a doubtful species).

58. *Trygon pastinaca* L.

Trygon pastinaca, Günther, Catalogue Fishes VIII, p. 478; Pellegrin, Ann. Monaco VI, 4, p. 9, Coast Senegambia.

Collection-Vermeulen: Several specimens from Cape Blanco.

Male: Length of disk $12\frac{2}{7}$ in width, $13\frac{3}{4}$ in rest of body. No tubercles or spines on body; caudal spine double. Adolescent.

Female: Length of disk to anal opening $1\frac{1}{5}$ in width. Length of tail (which looks mutilated) longer than disk. Anterior nasal valves conspicuously fringed. No tubercles or spines anywhere on body. Length 73 cm.

Embryos have the length of disk contained 2 (females) to $2\frac{2}{5}$ (males) in the tail.

The relative proportions seem to be subject to considerable variability. As a rule the species has a narrower disk; specimens from the North sea, however, show the same proportions as those described here.

Nomen vulgare: *Raton*.

59. *Trygon margarita* Gnthr.

Trygon margarita, Günther, Catalogue Fishes VIII, p. 479; Steind., Denkschr. Wien, XLIV, p. 50; Rochebrune, Faune Sénégal., op. cit. p. 54; Steind., Notes Leyden Mus. XVI, p. 91; Osorio, Jorn. Lisboa, II^a Serie, V, p. 201, Angola; Pellegrin, Ann. Monaco, VI, 4, p. 9; Regan, Ann. Magazin, N. H. (8), XV, p. 125, Lagos; Ehrenbaum, Fischerbote VI, 1914, p. 406, Cameroon.

Vermeulen-collection: one specimen from Cape Blanco.

Tail behind caudal spine with several rows of pungent thin little thorns. Length 56 cm.

Nomen vulgare: *Raton de Altura*.

60. *Trygon rudis* Gnthr.

Trygon rudis, Günther, Catalogue Fishes VIII, p. 479, Old Calabar, freshwater.

61. *Trygon bennetti* M. H.

Trygon bennetti, Günther, Catalogue Fishes VIII, p. 480; Steind., Sitzb. Wien, XLI, 1870, p. 577.

62. *Taeniura grabata* Geoffr.

Taeniura grabata, Osorio, Jorn. Lisboa, II^a Serie, V, p. 201, Capeverde.

63. *Pteroplatea micrura*.

Pteroplatea micrura, Günther, Catalogue Fishes VIII, p. 486; Ehrenbaum, Fischerbote VI, 1914, p. 407, Cameroon.

64. **Pteroplatea altavela** L. Gmel.

Pteroplatea canariensis, Val., Iles Canaries, p. 100, pl. 23.

" *altavela*, Günther, Catalogue Fishes VIII, p. 486.

Collection-Vermeulen: 2 specimens from Cape Blanco of 63 and 89 cM. width respectively.

(*Pteroplatea hirundo* Lowe (Madeira) very probably also here.)

65. **Pteroplatea vaillanti** Rochebr.

Pteroplatea vaillanti, Rochebrune, Faune Sénégalamb., loc. cit. p. 54, pl. II. Probably identical with the former. (64.) See Garman, op. cit. p. 415.

MYLIOBATIDAE.

66. **Myliobatis aquila** L.

Myliobatis aquila, Günther, Catalogue Fishes VIII, p. 489; Lowe, Trans. Zool. Soc. 1841, p. 196.

Collection-Vermeulen: Cape Blanco.

Length of disk to anus exactly half its width, contained 3 in total length. Width 18 cM.

Nomen vulgare: *Raton*.

67. **Myliobatis bovina** Geoffr.

Myliobatis bovina, Günther, Catalogue Fishes VIII, p. 490;

Rochebrune, Faune Sénégalamb., p. 56.

" *episcopus*, Valenc., Iles Canaries, p. 98, pl. XXIV.

68. **Aetobatis narinari** Euphras.

Aetobatis narinari, Günther, Catalogue Fishes VIII, p. 492;

Osorio, Jorn. Lisboa, II^a Serie, II, p. 60, Angola.

" *flagellum*, Rochebrune, Faune Sénégalamb., loc. cit. p. 56.

Both sides of Atlantic.

69. **Aetobatis latirostris** A. Dum.

Aetobatis latirostris, Rochebrune, Faune Sénégalamb., op. cit.

p. 56; Ehrenbaum, Fischerbote VI, 1914, p. 407, Cameroon.

Identical with the former after Garman, op. cit. p. 441.

70. *Rhinoptera marginata* Cuv.

Rhinoptera marginata, Günther, Catalogue Fishes VIII, p. 493;
Garman, op. cit. p. 445.

Collection-Vermeulen: Cape Blanco.

2 Specimens captured, a male and a female, of exactly the same width. The ♂ has a considerably longer tail (as in Tygon) (respectively 1 and $1\frac{1}{2}$ times the length of disk to vent).

Dentition: The form of the teeth seems to be subject to individual variability. One specimen has the depth of those of the submedian row contained 2- times, the other $2\frac{1}{2}$ —3 in width (Garman: $1\frac{1}{2}$). Their width is contained $1\frac{1}{3}$ — $1\frac{2}{5}$ in that of those of the median row. Height of nasal valve $3\frac{1}{3}$ — $3\frac{1}{2}$ in width. Both fishes have the caudal spine rudimentary and hidden in the skin.

Width 46 cm.

Not yet known from these coasts.

Nomen vulgare: *Raton de tierra*.

71. *Rhinoptera javanica* M. H.

Rhinoptera javanica, Günther, Catalogue Fishes VIII, p. 494;

Rochebrune, Faune Sénégal., p. 57.

„ *affinis*, Bleeker, Poissons Guinée, p. 19.

72. *Rhinoptera peli* Blkr.

Rhinoptera peli, Bleeker, Poissons Guinée, p. 18, pl. I;
Rochebrune, Faune Sénégal., l. c. p. 57; Pellegrin, Ann.
Monaco VI, 4, p. 10, Lévrierbay.

73. *Cephaloptera giorna* Lacep.

Cephaloptera giorna, Valenc., Iles Canaries, p. 37, pl. XXII.
Dicerobatis giorna, Günther, Catalogue Fishes VIII, p. 496.
Cephaloptera giorna, Rochebrune, Faune Sénégal., op. cit.
p. 57.

74. *Cephaloptera rochebrunei* Vaill.

Cephaloptera rochebrunei, Vaillant, Bull. Soc. Phil. 1879, p. 171;
Rochebrune, Faune Sénégal., op. cit. p. 58.

TELEOSTEI.

ELOPIDAE.

75. *Elops saurus* L.

Elops saurus, Günther, Catalogue Fishes VII, p. 470; Rochebrune, Faune Sénégalamb., p. 168; Steind., Denkschr. Wien, XLIV, p. 48.

Both sides of Atlantic.

76. *Elops lacerta* C. V.

Elops lacerta, Günther, Catalogue Fishes VII, p. 471; Rochebrune, Faune Sénégalamb., p. 168; Boulenger, Poissons bassin du Congo. 1901, p. 47. Pellegrin, Ann. Monaco VI, 4, p. 10; Regan, Ann. Mag. N. H. (8) XV, p. 125, Lagos; Ehrenbaum, Fischerbote VI, 1914, p. 107, Cameroon.

77. *Megalops atlanticus* C. V.

Megalops thrissoides, Günther, Catalogue Fishes VII, p. 472; Rochebrune, Faune Sénégalamb., loc. cit. p. 169.

„ *atlanticus*, Pellegrin, Ann. Monaco VI, 4, p. 11.

Both coasts of Atlantic.

ALBULIDAE.

78. *Albula vulpes* L.

Albula conorhynchus, Günther, Catalogue Fishes VII, p. 468; Rochebrune, Faune Sénégalamb., loc. cit. p. 167.

„ *goreensis*, Cuv. Val. XIX, p. 342.

„ *vulpes*, Pellegrin, Ann. Monaco VI, 4, p. 11.

Both sides of Atlantic.

79. *Albula glossodonta* Forst.

Albula glossodonta, Steind., Notes Leyden Mus. XVI, p. 83, Liberia.

CLUPEIDAE.

80. *Engraulis encrasicolus* L.

Engraulis encrasicolus, Günther, Catalogue Fishes VII, p. 385; Pellegrin, Ann. Monaco VI, 4, p. 12, Rufisque.

81. *Clupea (Brevoortia) aurea* Agass.

Clupea aurea, Günther, Catalogue Fishes VII, p. 437; Rochebrune, Faune Sénégalamb., loc. cit. p. 165.

Brevoortia tyrannus, Regan, Ann. Mg. N. H. (8) XIX, p. 301.
Both sides of Atlantic.

82. *Sardina pilchardus* Artedi.

Clupea pilchardus, Günther, Catalogue Fishes VII, p. 439.

" " Vinciguerra, Atti Soc. Ital. Sci. Nat., XXXIV, p. 331, Canaries.

Sardina pilchardus, Regan, Ann. Mg. N. H. (8) XIX, p. 12.

83. *Sardinella eba* C. V.

Clupea dorsalis, Günther, Catalogue Fishes VII, p. 438; Peters, Monatsberichte, Ac. Berlin 1876, p. 251; Rochebrune, Faune Sénégalamb., p. 165; Regan, Ann. Mag. N. Hist. (8) XV, p. 125, Lagos; Ehrenbaum, Fischerbote V, 1913, p. 400, Cameroon.

Alosa eba, Cuvier et Valenciennes, op. cit. XX, p. 369.

Clupea eba, Pellegrin, Ann. Monaco, VI, 4, p. 13.

Sardinella eba, Regan, Ann. Mag. N. H. (8) XIX, p. 380, Nigeria.

Clupea setosa, Steind. Sitz.ber. Ak. Wien, LX, p. 311, pl. VI; Denkschr. Wien, XLV, p. 14, Liberia, Gabon.

Alausa platycephala, Bleeker, Nat. Verh. Holl. My. Wet. Haarl. (2) XVIII, 1863, p. 123, Guinea.

84. *Sardinella aurita* C. V.

Sardinella aurita, Cuvier et Valenciennes, op. cit. XX, p. 263, pl. 594; Regan, Ann. Mag. N. Hist. (8) XIX, p. 378.

Clupea aurita, Günther, Catalogue Fishes VII, p. 420; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, 1893, p. 331; Pellegrin, Ann. Monaco VI, 4, p. 13.

Collection-Vermeulen: one specimen from Gorrei (Rio d'Ouro).

D. 18; A. 18; L. l. \pm 45. Scutes 18 + 15.

Head = Depth = $3\frac{2}{3}$ in length without caudal. Adipose eyelid present. Teeth in jaws. Palatine teeth well developed. No teeth on vomer. Pterygoids anteriorly with a small patch of teeth. Tongue with an oblongue patch. Ventrals under dorsal.

Colour: A dark spot superiorly in the gill-opening.

Length: 32 cm.

Nomen vulgare: *Sardina machiralado*.

85. **Sardinella maderensis** Lowe.

Clupea maderensis, Günther, Catalogue Fishes VII, p. 440, partim; Osorio, Jorn. Lisboa (II) V, p. 199, Angola, Gulf of Guinea; Rochebrune, Faune Sénégalamb., l. c. p. 165.

Sardinella maderensis, Regan, Ann. Mag. N. Hist. (8) XIX, p. 380, Capeverde.

86. **Sardinella cameronensis** Regan.

Sardinella cameronensis, Regan, Ann. Mag. N. H. (8) XIX, p. 381, Cameroon.

Clupea senegalensis, Günther, Catalogue Fishes VII, p. 441.

Clupea senegalensis, Steind., Notes Leyden Mus. XVI, p. 81; Osorio, Jorn. Lisboa, II^a Serie, II, p. 133, St. Thomé; Rochebrune, Faune Sénégalamb., op. cit. p. 166; Pellegrin, Ann. Monaco, VI, 4, p. 13.

Collection-Vermeulen: Two specimens from Rio d'Ouro. D. 20;

A. 21—22; (the rudim. rays counted).

Length: 23—24.5 cM.

87. **Poecilothrissa congica** Regan.

Poecilothrissa congica, Regan, Ann. Mg. N. H. (8) XIX, p. 202, Congo. Recorded here for its being separated off from *Pell. vorax*, Boul. Cat. Afr. Fish I, p. 156.

88. **Pellonula vorax** Günther.

Pellonula vorax, Günther, Catalogue Fishes VII, p. 452; Rochebrune, Faune Sénégalamb., op. cit. p. 166; Regan, Ann. Mag. N. H. (8) XV, p. 125, (Lagos); Pellegrin, Ann. Monaco VI, 4, p. 13, Gabon; Ehrenbaum, Fischerbote V, 1913, p. 404, Cameroon (freshwater).

89. **Pellonula modesta** Fischer.

Pellonula modesta, Fischer, Jahrb. Hamburg. Wiss. Anstalten 1885, (II), p. 75, Eloby.

90. **Pellona africana** Bl.

Pellona africana, Bleeker, Poissons Guinée, p. 122; Günther, Catalogue Fishes VII, p. 455; Rochebrune, Faune Sénégalamb., op. cit. p. 167; Osorio, Jorn. Lisboa, II^a Serie, V, p. 199; Bissau, Angola; Pellegrin, Ann. Monaco VI, 4, 14, Gabon; Ehrenbaum, Fischerbote V, 1913, p. 403.

Collection-Vermeulen: Coast of Sénégal.

Colour: A black spot on opercle.

Length: 23—24.5 cm.

Nomen vulgare: *Machuelo*.

91. *Pellona gabonica* A. Dum.

Pellona gabonica, A. Duméril, Arch. Mus. X, p. 259; Rochebrune, Faune Sénégalamb., loc. cit. p. 167. (United by Günth with the former species.)

SILURIDAE.

92. *Clarias anguillaris* L.

Clarias anguillaris, Günther, Catalogue Fishes V, p. 14; Osorio, Jorn. Lisboa, II^a Serie, V, p. 199, Dahomey.

93. *Chrysichthys nigrodigitatus* Lac.

Chrysichthys nigrodigitatus, Günther, Catalogue Fishes V, p. 73; Osorio, Jorn. Lisboa, II^a Serie, V, p. 199, Bissau, Dahomey; Pellegrin, Ann. Monaco VI, 4, p. 21, lagoon-Bassam. Ehrenbaum, Fischerbote VI, 1914, p. 18, Cameroon.

94. *Arius latiscutatus* Günther.

Arius latiscutatus, Günther, Catalogue Fishes (part) V, p. 151; Steind., Denkschr. Wien, XLIV, p. 48, Senegal; id. Sitzb. Wien, LXXX, 1880, p. 173; Boulenger, Cat. Freshwater fishes Africa II, p. 385; Pellegrin, Ann. Monaco VI, 4, p. 22, Gabon; Ehrenbaum, Fischerbote VI, 1914, p. 53, Cameroon.

95. *Arius heudeloti* C. V.

Arius heudeloti, Günther, Catalogue Fishes V, p. 154; Regan, Ann. Mag. N. H. (8) XV, p. 125.

" " *partim*, Boul., Cat. Fresh-water fishes Africa II, p. 387; Pellegrin, Ann. Monaco VI, 4, p. 22, Lévrierbay.

Collection-Vermeulen: Cape Blanco.

D. I, 7; A. 19; P. I, 11.

Greatest depth $6\frac{1}{4}$ in length (8 in total). Head 4^{+} (5^{+}). Width of head $5\frac{1}{4}$ ($6\frac{1}{2}$). Eye $3\frac{1}{2}$ in interorbital, 6 in head. Distance from hind margin of eye to end of opercle greater than to tip of snout. Maxillary barbels reaching $\frac{1}{3}$ the pectoral length, equal to end of

opercle. External mandibular barbels reaching base of pectoral. No palatine teeth. Of the vomerine teeth only a few remnants left. Lateral line wanting. Axillary pores present. Dorsal spine = pectoral spine = $1\frac{3}{8}$ in head, $6\frac{2}{3}^+$ in total length, its barbs stronger than those of *A. parkii*. First dorsal ray $1\frac{1}{5}$. Base of first dorsal $2\frac{1}{3}$ in its height. Base of adipose fin $1\frac{2}{3}$ in base of first dorsal. Height of adipose in $4\frac{2}{3}$ in height of first dorsal. Upper caudal lobe $4\frac{1}{2}$ in length.

Colour: very dark. Fins all largely black on both sides.

Length: 52.5 cm.

Nomen vulgare: *Sabado*.

96. *Arius parkii* Günther.

Arius parkii, Günther, Catalogue Fishes V, p. 154, Lagos.

„ *heudeloti* (partim), Boulenger, Cat. Freshwater fishes Africa II, p. 387.

Collection-Vermeulen: Cape Blanco.

D. I, 7; A. 20.

Greatest depth $5\frac{1}{2}$ —6 in length ($6\frac{1}{2}$ —7 in total). Head $3\frac{1}{3}$ —4 ($4\frac{2}{3}$ —4⁺). Width of head 5 — $5\frac{1}{3}$ (6 — $6\frac{2}{5}$). Eye $2\frac{2}{3}$ —3 in interorbital, 5 — $6\frac{1}{3}$ in head. Distance from hind margin of eye less to end of opercle than to tip of snout. Maxillary barbels reaching little past or not nearly to base of pectoral. External mandibular barbels not nearly to base of pectoral or to end of maxillary barbel. Palato-vomerine patches of teeth separated by a narrow bare space.

Dorsal spine (= pectoral spine) $1\frac{2}{5}$ — $1\frac{1}{2}$ in head, 6^+ in total. First dorsal ray $1\frac{1}{4}$ — $1\frac{1}{2}$. Base of dorsal $2\frac{1}{4}$ — $2\frac{1}{2}$ in its height. Base of adipose fin $1\frac{1}{2}$ in base of first dorsal. Height adipose fin 4 in height of first dorsal. Base of anal 2 in head. Upper caudal lobe 4 — $4\frac{1}{2}$ in total length, with accessory rays. Lateral line with many ramose pore-canaliculi; vertical porelines visible or invisible.

Length: 29.5—47 cm.

Nomen vulgare: *Sabado*.

97. *Arius capellonis* Steind.

Arius capellonis, Steind., Sitzb. Wien, LV, 1867, p. 523, Monrovia; Osorio, Jorn. Lisboa, II^a Serie, V, p. 199, Capeverde, Angola.

98. *Arius granulatus* Peters.

Arius granulatus, Peters, Monb. Ak. Berl. 1868, p. 454, Lagos (Gulf of Bénin).

ANGUILLIDAE.

99. *Anguilla vulgaris* Turton.

Anguilla vulgaris, Günther, Catalogue Fishes VIII, p. 28.

" *canariensis*, Val., Iles Canaries, p. 88.

100. *Conger marginatus* Val.

Conger marginatus, Rochebrune, Faune Sénégal., loc. cit.
p. 169 (an Indian species!).

101. *Conger vulgaris* Cuv.

Congrus vulgaris, Lowe, Tr. Zool. Soc. 1841, p. 192.

Conger vulgaris, Günther, Catalogue Fishes VIII, p. 38;
Vinciguerra, op. cit. p. 332, Canaries.
Both sides of Atlantic.

102. *Conger macrops* Günther.

Echelus caudilimbatus, Poey, Ann. N. Y. Ac. N. H., p. 322, 1870.

Conger macrops, Günther, Catalogue Fishes VIII, p. 40;
Steind., Notes Leyden Mus. XVI, p. 87, Liberia; Osorio, Jorn.
Lisboa, IIª Serie, V, p. 199, Capeverde, Anno Bom.
Both sides of Atlantic.

103. *Congromuraena balearica* Delar.

Congromuraena balearica, Günther, Catalogue Fishes VIII,
p. 41; Vinciguerra, Att. Soc. Ital. Sc. Nat. XXXIV, 1893, p. 332,
Canaries.

104. *Heteroconger longissimus* Günther.

Heteroconger longissimus, Günther, Catalogue Fishes VIII,
p. 45; Vinciguerra, Att. Soc. Ital. Sc. Nat. XXXIV, 1893,
p. 332, Canaries.

105. *Heterenchelys microphthalmus* Regan.

Heterenchelys microphthalmus, Regan, Ann. Mag. N. H. (8) X,
1912, p. 323; Congo, Lagos; Pellegrin, Ann. Monaco, VI, 4,
p. 23, Congo.

106. *Heterenchelys macrurus* Regan.

Heterenchelys macrurus, Regan, Ann. Mag. N. H. (8) X, 1912,
p. 323.

107. ***Muraenesox ferox* Costa.**

Muraenesox ferox, Regan, Ann. Mag. Nat. Hist. (8) XV, p. 125 (Lagos).

Collection-Vermeulen: Coast Senegambia.

Head 2 in trunk. Tail 46 % of total. Eye 8 in head. Maxillary 2 in head equal to pectoral. Several curved rows of papillae on snout and occiput. Teeth biserial; inner row enlarged, but in the upper jaw there are several rows of small granular teeth inside the larger teeth. Some of the latter are feebly tricuspid, a character more evident in the vomerine teeth, which are 12 in number, rapidly increasing in length to the 10th which is as large as the heavy lower canines. Dorsal fin inserted above gill cleft; caudal long (broken).

Colour: purplish, blotched all over with white. Dorsal and caudal black-edged. Pectoral black anteriorly.

Length: 1 M.

Nomen vulgare: *Anguilla*.

108. ***Myrophis punctatus* Lacep.**

Myrophis punctatus, Günther, Catalogue Fishes VIII, 50, W. Africa.

„ *vafer*, Pietschm., Jahrb. Nass. V. Naturk. 66, p. 177, Cameroon.

109. ***Ophichthys rostellatus* Rich.**

Ophichthys rostellatus, Günther, Catalogue Fishes VIII, p. 56; Rochebrune, Faune Sénégalamb., op. cit. p. 170.

110. ***Ophichthys triserialis* Kaup.**

Ophichthys triserialis, Günther, Catalogue Fishes VIII, p. 58; Osorio, Jorn. Lisboa, II^a Serie V, p. 200; St. Thomé, Bissau Capeverde.

Both sides of Atlantic.

111. ***Ophichthys serpens* L.**

Ophichthys serpens, Günther, Catalogue Fishes VIII, p. 65; Osorio, Jorn. Lisboa, II^a Serie, V, p. 200; Anno Bom.; id. III, p. 135, Angola.

112. **Ophichthys semicinctus** Rich.

Ophichthys semicinctus, Günther, Catalogue Fishes VIII, p. 80; Steind., Notes Leyden Mus. XVI, p. 88; (Liberia), Rochebrune, Faune Sénégal., loc. cit. p. 170; Pietschmann, Jahrb. Nassau Ver. Naturk. Jahrg. 66, 1913, p. 176, Cameroon.

113. **Ophichthys havannensis** Bloch.

Ophichthys havannensis, Günther, Catalogue Fishes VIII, p. 67; Osorio, Jorn. Lisboa, II^a Serie, V, p. 200, Capeverde. Both sides of Atlantic.

114. **Ophichthys pardalis** Valenc.

Ophisurus pardalis, Val., Iles Canaries, p. 90.
(?) *Ophichthys pardalis*, Steind., Sitzb. Wien, C, p. 363; Rochebrune, Faune Sénégal., p. 171.

115. **Ophichthys oculatus** Kaup.

Ophichthys pardalis, Günther, Catalogue Fishes VIII, p. 82.
Myrichthys oculatus, Jordan & Davis, Apodal fishes of America and Europe, Report U. S. Fish Comm. for 1888, p. 618. Both sides of Atlantic.

116. **Ophichthys (Sphagebranchus) büttikoferi** Steind.

Ophichthys (Sphagebranchus) büttikoferi, Steind., Notes Leyden Mus. XVI, p. 88, Liberia; Pellegrin, Ann. Monaco VI, 4, p. 27, Lévrierbay.

117. **Ophichthys (Sphagebranchus) guineënsis** Osorio.

Ophichthys (Sphagebranchus) guineënsis, Osorio, Jorn. Lisboa, II^a Serie, III, p. 170, St. Thomé.
Sphagebranchus (?) cephalopeltis, Bleeker, Verh. Holl. Maatsch. Haarl. 1862, p. 128, Guinea.

118. **Panturichthys mauretanicus** Pell.

Panturichthys mauretanicus, Pellegrin, Annales Monaco VI, 4, p. 25, Mauretania.

MURAENIDAE.

119. *Myroconger compressus* Günthr.

Myroconger compressus, Günther, Catalogue Fishes VIII, p. 93; Osorio, Jorn. Lisboa, IIª Serie, V, p. 200, St. Thomé.

120. *Muraena* (1) *helena* L.

Muraena helena, Günther, Catalogue Fishes VIII, p. 96; Troschel, Arch. Naturg. 1866, I, p. 237; Vinciguerra, Att. Soc. Ital. Sc. Nat. 1893, p. 332, Canaries.

Collection-Vermeulen: Canary-Islands and Gorrei, length 110 cM. There is another specimen in the collection from Gorrei, which belongs probably to a variety of this species. The head is $2\frac{4}{5}$ in trunk; tail a trifle longer than rest of body.

Its mouth-cleft $2\frac{1}{3}$ in head. Only 12 teeth in lower jaw (!).

Colour: A very dark, nearly *black* ground colour. Just as in the *typical* *M. helena* the ringlike pale spots and the dark ones are grouped together in paler areas. Fins edged with a very regular yellow *spotting* throughout their length.

Length 55 cM.

Nomen vulgare: *Murena*.

121. *Muraena augusti* Kamp.

Muraena augusti, Günther, Catalogue Fishes VIII, p. 97; Vinciguerra, Att. Soc. Ital. Sc. Nat. XXXIV, p. 332, Canaries.

122. *Muraena melanotis* Kaup.

Muraena melanotis, Günther, Catalogue Fishes VIII, p. 98; Rochebrune, Faune Sénégalamb., loc. cit. p. 171; Osorio, Jorn. Lisboa, IIª Serie, V, p. 200; Capeverde, Guinea, Angola. Both sides of Atlantic.

123. *Muraena undulata* (Lac.) Gnthr.

Muraena undulata, Pietschmann, Jahrb. Nassau, Ver. Naturk. 66, 1913, p. 180, Cameroon (an Indopacific species, not = *Echidna catenata* Bl.).

(1) Not subdivided for practical reasons.

124. *Muraena vicina* Casteln.

Gymnothorax maculipinnis, Blkr., op. cit. 129, Guinea.

Thyrsoidea maculipinnis, Kaup., Arch. Nat. Gesch. 1856, I, p. 61; Troschel, id., 1866, I, p. 237, Capeverde; Rochebrune, Faune Sénégalamb., loc. cit. p. 142.

Muraena maculipinnis, Günther, Catalogue Fishes VIII, p. 124;

Lycodontis vicinus, Journ. L. Gum. Proc. Ac. Nat. Sc. Philadelphia 1898, p. 354, Canaries.

(perhaps = *Muraena* Afra Bl.)

Osorio, Journ. Lisboa (II), V, p. 23, Capeverde, St. Thomé.

Collection-Vermeulen: Adult female from Cape Blanco. Head $2\frac{1}{3}$ in trunk, 7- in total. Anus situated at the end of the third sixth part. Greatest depth $5\frac{1}{2}$ in length to anus, 13 in total. No steep profile. Eye 2 in snout, 9 in head. Buccal cleft 2 in head, about twice the eye. Upper jaw broken, in lower jaw 22 teeth without strong canines.

Colour: nearly uniform. Dorsal and anal normal. Gular folds present.

Length 95 cM.

Nomen vulgare: *Murena*.

Both sides of Atlantic.

125. *Muraena afra* Bl.

Muraena afra, Günther, Catalogue Fishes VIII, p. 123; Steind., Denkschr. Wien, XLIV, p. 49, Senegamb.; Osorio, Journ. Lisboa, II^a Serie, V, p. 200.

Thyrsoidea lineopinnis, Kaup, Recorded as a distinct species by Rochebrune, Faune Sénégalamb., op. cit. p. 171.

Perhaps identical with the American *M. funebris* Ranz.

126. *Muraena dinocephala* nov. spec.

Fig. 58. *Muraena dinocephala* nov. spec. $\times \frac{1}{5}$.

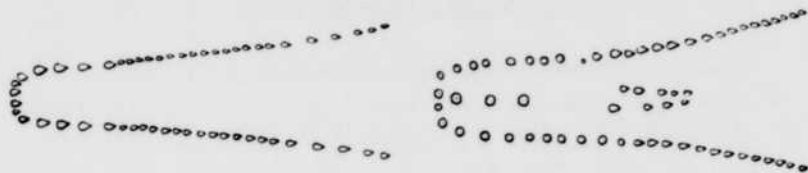


Fig. 58a. Teeth of *Muraena dinocephala* nat. size.

Collection-Vermeulen: Cape Blanco, August.

One adult male: Head very large and heavy, only $1\frac{2}{3}$ in trunk, 6 in total. Body very high anteriorly, the greatest depth of the head being $\frac{1}{4}$ of length to vent! Profile of forehead very steep, forming a marked angle with the line of snout behind eye, its height $1\frac{1}{2}$ in length of head. Eye $2\frac{1}{2}$ in snout, 13 in head. Snout 5 i. h. Buccal cleft 2 in head. Teeth: uniserial, 26 in one upper jaw; no canines differentiated; 22—24 in one lower jaw with the 4 anterior ones enlarged (besides some much smaller ones between these). Vomer with 11 teeth in a *bifid* line, the anterior larger ones depressible. Tail longer than rest of body.

Colour: Yellowish brown with minute paler dots and brown vermiculations anteriorly. Gular plications darker. Lips dusky; branchial cleft scarcely darker hued. Dorsal with narrow longitudinal lines. Anal with a dusky edge which is continued for a short distance on dorsal.

Length of type 105 cM.

Nomen vulgare: *Murena*.

127. *Muraena unicolor* Delaroche.

Thyrsoidea unicolor, Rochebrune, Faune Sénégal., loc. cit. 172.

Muraena unicolor, Günther, Catalogue Fishes VIII, p. 125.

128. *Muraena lecomtei* Kaup.

Muraena lecomtei, Günther, Catalogue Fishes VIII, p. 131.

Poecilophis lecomtei, Rochebrune, Faune Sénégal., loc. cit. p. 172.

129. *Muraena peli* Kaup.

Gymnothorax peli, Bleeker, Poissons Guinée, p. 130, pl. 28.

Muraena peli, Günther, Catalogue Fishes VIII, p. 132; Pietschmann, Jahrb. Nassau, Ver. Naturk. 66, 1913, p. 179, Cameroon.

Pocilophis peli, Rochebrune, Faune Sénégal., loc. cit. p. 173; Osorio, Jorn. Lisboa (II), V, p. 200, Angola.

Collection-Vermeulen: Cape Blanco, St. Louis, many specimens.

Head $2\frac{2}{5}$ in trunk, $7\frac{5}{7}$ in total. Tail equal to rest of body. Greatest depth $8+$ in length to anus, $2\frac{1}{4}$ in head. Profile gradually ascending. Eye $1\frac{3}{5}$ —2 in snout. Snout $6\frac{1}{2}$ in head, projecting over lower jaw. Buccal cleft 3 in head. Teeth: in upper jaw biserial. Maxillary with 13 small outer, 5 larger inner ones. Praemaxillary with 5—6 larger teeth in a row and a movable one behind (more interiorly). Vomerine teeth: 3 large middle ones and several small ones much more backward. 21—22 uniserial mandibular teeth with anteriorly an extra inner row of 3 larger ones.

Colour: The smallest specimens show an profusity of minute pale specks on a brown ground colour. Each pore and nostril of the head surrounded by a conspicuous spot of pure white. Fins with a narrow white edge and sometimes dark longitudinal rows. In one larger specimens these markings have disappeared, the colour being nearly uniform, but the white pore-spots are remnant and may be more or less confluent, suppressing partly the ground-colour of snout and lower jaw. Gular lines always present.

Length 13—27 cM.

130. *Gymnomuraena vittata* Richards.

Gymnomurana vittata, Günther, Catalogue Fishes VIII, p. 134; Osorio, Jorn. Lisboa (II), III, p. 181, St. Thomé.

131. *Enchelycore nigricans* Bonat.

Enchelycore nigricans, Günther, Catalogue Fishes VIII, p. 135; Osorio, Jorn. Lisboa (II), III, p. 182, St. Thomé.
Both sides of Atlantic.

132. *Hoplunnis punctatus* Regan.

Hoplunnis punctatus, Regan, Ann. Mag. N. H. (8), XV, p. 126, Lagos.

SCOPELIDAE.

133. *Saurus griseus* Lowe.

Saurus trivirgatus, Valenc., Iles Canaries, p. 72, pl. 15.
" *griseus*, Günther, Catalogue Fishes V, p. 394; Steind., Sitzb. Wien. LVII, 1868, p. 728.
Both sides of Atlantic.

134. **Saurus atlanticus** Johns.

Saurus atlanticus, Günther, Catalogue Fishes V, p. 395; Vinciguerra, Atti. Soc. Ital. XXXIV, p. 329, Canaries.

135. **Saurus intermedius** Spix.

Saurus intermedius, Günther, Catalogue Fishes V, p. 396; Osorio, Jorn. Lisboa (II), III, p. 179, St. Thomé.
Both sides of Atlantic.

136. **Saurus myops** Bl. Schn.

Saurus myops, Poissons Guinée, p. 127; Günther, Catalogue Fishes V, p. 398; Osorio, Jorn. Lisboa (II) V, p. 199, St. Thomé.
Both sides of Atlantic.

137. **Aulopus filamentosus** Bl.

Aulopus filifer maculatus, Valenc., Iles Canaries, p. 73—74, pl. 15.

„ *filamentosus*, Günther, Catalogue Fishes V, p. 402.

138. **Scopelus benoitii** Cocco.

Scopelus benoitii, Günther, Catalogue Fishes V, p. 406; Osorio, Jorn. Lisboa (II) III, p. 140.
Both sides of Atlantic.

139. **Scopelus humboldti** Risso.

Scopelus humboldti, Günther, Catalogue Fishes V, p. 407; Vinciguerra, Atti. Soc. It. Sc. Nat. XXXIV, p. 330, Teneriffa.
Both sides of Atlantic.

140. **Paralepis sphyraenoides** Risso.

Paralepis sphyraenoides, Günther, Catalogue Fishes V, p. 417; Vinciguerra, Atti. Soc. Ital. Sc. Nat. 1893, p. 330.

ALEPIDOSAURIDAE.141. **Alepidosaurus ferox** Lowe.

Alepidosaurus ferox, Günther, Catalogue Fishes V, p. 421; Vinciguerra, Atti. Soc. Ital. Sci. Nat. XXXIV, p. 330, Canaries.
Both sides of Atlantic.

KNERIIDAE.**142. *Kneria angolensis* Steind.**

Kneria angolensis, Steind., Verh. Zoöl. Bot. Ges. Wien, XVI, 1866, p. 769, Angola.

CYPRINODONTIDAE.**143. *Haplochilus spilauchen* A. Dum.**

Aplocheilichthys typus, Blkr., Poissons Guinée, p. 116.

Haplochilus spilauchen, Steind., Notes Leyden Mus. XVI, p. 75, Liberia.

144. *Haplochilus spilargyreus* A. Dum.

Poecilia spylargyreia, Osorio, Jorn. Lisboa (II) V, p. 200, Capeverde, St. Thomé, Angola.

N.B. Other species from Liberia, are described by Peters in the Mon.b. Berlin 1864, p. 395—396 (freshwater).

145. *Neolebias unifasciatus* Steind.

Neolebias unifasciatus, Steind., Notes Leyden Mus. XVI, p. 78, Liberia.

AULOSTOMATIDAE.**146. *Aulostoma coloratum* Müll. Trosch.**

Aulostoma coloratum, Günther, Catalogue Fishes III, p. 536; Osorio, Jorn. Lisboa (II) V, p. 198, St. Thomé, Gulf of Guinea, Angola.

Both sides of Atlantic.

FISTULARIIDAE.**147. *Fistularia villosa* Klunz.**

Fistularia petimba, (Lacép.), Jordan & Evermann, Fishes of North & Middle America, p. 758.

„ *serrata*, Cuvier, Règne Animal 1817, p. 349; Günther, Catalogue Fishes III, p. 533; Jordan & Evermann, Rep. U. S. Fish. Comm. XXIII, p. 116.

Collection-Vermeulen: Cape Blanco, Arguin-Bank. Many specimens; lateral line rough posteriorly, skin smooth in *adults*. Head $2\frac{5}{7}$ in length without caudal.

Length: up to 71 cM. with caudal filament.

Not yet recorded from these coasts.

Both sides of Atlantic.

148. ***Fistularia tabacaria* L.**

Fistularia tabacaria, Günther, Catalogue Fishes III, p. 529; Rochebrune, Faune Sénégalamb., loc. cit. p. 121; Osorio, Jorn. Lisboa (II) V, p. 198, Capeverde, Gulf of Guinea, Angola. Both sides of Atlantic.

CENTRISCIDAE.

149. ***Centriscus scolopax* L.**

Centriscus scolopax, Günther, Catalogue Fishes III, p. 518; Steind., Sitzb. Wien, LVII, 1868, p. 687.

Macrorhamphosus scolopax, Jordan & Gunn, Proc. Ac. Philadelphia, 1898, p. 340, Canaries.

Both sides of Atlantic.

150. ***Centriscus gracilis* Lowe.**

Centriscus gracilis, Günther, Catalogue Fishes III, p. 521; Rochebrune, Faune Sénégalamb., loc. cit. p. 121; Steind. Sitzb. Wien, C, p. 361, Canaries.

SYNGNATHIDAE.

151. ***Syngnathus acus* L.**

Syngnathus acus, Günther, Catalogue Fishes VIII, p. 157; Rochebrune, Faune Sénégalamb., loc. cit. p. 174; Vinciguerra, Catalogo Pesci Isole Canarie, loc. cit. p. 333.

152. ***Syngnathus pelagicus* L.**

Syngnathus pelagicus, Günther, Catalogue Fishes VIII, p. 165; Pellegrin, Ann. Monaco IV, 4, p. 28, Port-Etienne.

Collection-Vermeulen: Arguin-Bank.

D. 30, Rings 18 + 34.

Length 9 cM.

Both sides of Atlantic.

153. **Syngnathus kaupi** Blkr.

Syngnathus kaupi, Bleeker, Natuurk. Verhand. Haarlem, XVIII, Poissons Guinée, p. 24, tab. 4; Steind., Notes Leyden Mus. XVI, p. 89, Liberia; Günther, Catalogue Fishes VIII, p. 174.

154. **Doryichthys juillerati** Rochebrune.

Doryichthys juillerati, Rochebrune, Faune Sénégal, loc. cit. p. 174, pl. VI.

155. **Nerophis ophidion** L.

Nerophis ophidion, Günther, Catalogue Fishes VIII, p. 192; Pellegrin, Ann. Mon. VI, 4, p. 29, Lévrierbay.

156. **Ophidium barbatum** L.

Ophidium barbatum, Steind., Denkschr. Wien, XLIV, p. 47, Senegal.

157. **Hippocampus antiquorum** Leach.

Hippocampus antiquorum, Günther, Catalogue Fishes VIII, p. 199; Vinciguerra, Atti Soc. It. Sc. Nat. XXXIV, p. 333, 1893, Canaries.
Both sides of Atlantic.

158. **Hippocampus guttulatus** Cuv.

Hippocampus guttulatus, Rochebrune, Faune Sénégal, loc. cit. p. 175; Osorio, Jorn. Lisboa (II) V, p. 200, Capeverde, St. Thomé, Angola; Pellegrin, Ann. Monaco VI, 4, p. 29.
Both sides of Atlantic.

159. **Hippocampus bicuspis** Kaup.

Hippocampus bicuspis, Rochebrune, Faune Sénégal, loc. cit. p. 176.

SCOMBRESOCIDAE.160. **Belone trachura** C. V.

Belone trachura, Günther, Catalogue Fishes VI, p. 235; Troschel, Arch. Natur-Gesch. 1866, I, p. 234.

161. **Belone ardeola** C. V.

Belone lovii, Günther, Catalogue Fishes VI, p. 236; Roche-brune, Faune Sénégal., loc. cit. p. 160; Osorio, Jorn. Lisboa (II) V, p. 199, St. Thomé, Anno Bom.
Both sides of Atlantic. (See first part p. 29.)

162. **Belone choram** Forsk.

Belone choram, Günther, Catalogue Fishes VI, p. 239 and 357; Steind., Denkschr. Wien, XLIV, p. 47, Senegal; Osorio, Jorn. Lisboa (II) II, p. 131, St. Thomé.

163. **Belone caribaea** Les.

Belone caribaea, Peters, Mon.b. Ac. Berlin, 1876, p. 250, Victoria; (Günther, Catalogue Fishes VI, p. 241, or = acus?)
Both sides of Atlantic.

164. **Belone hians** C. V.

Belone hians, Günther, Catalogue Fishes VI, p. 248; Troschel, Arch. Nat. g. 1866, I, p. 233, Capeverde.
Both sides of Atlantic.

165. **Belone raphidoma** Ranz.

Belone raphidoma, Günther, Catalogue Fishes VI, p. 249; Osorio, Jorn. Lisboa (II) III, p. 140, St. Thomé.
Both sides of Atlantic.

166. **Belone gracilis** Lowe.

Belone gracilis, Günther, Catalogue Fishes VI, p. 252; Vinciguerra, op. cit. p. 330, Canaries; Pellegrin, Ann. Monaco VI, 4, p. 29, Lévrierbay.

167. **Belone vulgaris** Cuv.

Belone vulgaris, Günther, Catalogue Fishes VI, p. 254.
Esox belone, Jord. & Gunn. Tr. Ac. Nat. Sc. Philadelphia 1898, p. 340, Canaries.

168. **Belone senegalensis** C. V.

Belone senegalensis, Günther, Catalogue Fishes VI, p. 254; Steind., Sitzb. Wien, LXI, p. 557, Senegal; Rochebrune, Faune Séné gamb., loc. cit. p. 160; Steind., Notes Leyden Mus. XVI, p. 73; Pellegrin, Ann. Monaco VI, 4, p. 30.

169. **Sombresox saurus** Cuv.

Sombresox saurus, Günther, Catalogue Fishes VI, p. 257, Cape; Lowe, Tr. Zool. Soc. 1841, p. 188, Madeira.
Doubtless occurring on the W. African coast, though not yet found.
Both sides of Atlantic.

170. **Hemirhamphus calabaricus** Guth.

Hemirhamphus calabaricus, Günther, Catalogue Fishes VI, p. 266; Pellegrin, Ann. Monaco VI, 4, p. 30, Ivory-coast.

171. **Hemirhamphus vittatus** Val.

Hemirhamphus vittatus, Valenciennes, Iles Canaries, p. 70; Günther, Catalogue Fishes VI, p. 269; Steind., Sitzb. Wien, LV, p. 522, Monrovia; Osorio, Jorn. Lisboa (II) V, p. 199, St. Thomé, Angola; Rochebrune, Faune Séné gamb., loc. cit. p. 161.
" *guineensis*, Bleeker, Natuurk. Verh. Holl. Maatsch. Haarlem, 1863, p. 119, Guinea.
" *brownii* C. V. after Troschel, Arch. Nat. Gesch. 1866, I, p. 236.

172. **Hemirhamphus brasiliensis** L.

Hemirhamphus pleii, Günther, Catalogue Fishes VI, p. 269; Peters, Mon. b. Berlin 1876, p. 250, Victoria.
" *brasiliensis*, Günther, Catalogue Fishes VI, p. 270; Rochebrune, Faune Séné gamb., loc. cit. p. 161.
" *brownii* (C. V.) after Günther; (Duméril, Poiss. Afr. occid., Arch. Mus. X, p. 264).
Both sides of Atlantic. (See part I p. 34.)

173. **Hemirhamphus schlegelii** Blkr.

Hemirhamphus schlegelii, Bleeker, Natuurk. Verh. Holl. Maatsch. Haarlem, 1863, p. 120, Guinea; Steind., Notes Leyden Mus. XVI, p. 74, Liberia; Rochebrune, Faune Sénégalamb., loc. cit. p. 161.

174. **Exocoetus acutus** C. V.

Exocoetus acutus, Günther, Catalogue Fishes VI, p. 281; Pellegrin, Ann. Monaco VI, 4, p. 30, Togo.
Both sides of Atlantic.

175. **Exocoetus evolans** L.

Exocoetus obtusirostris, Günther, Catalogue Fishes VI, p. 283; Steind., Denkschr. Wien, XL, p. 54, Gabon; [Rochebrune, Faune Sénégalamb., loc. cit. p. 161;] Osorio, Dahomey.

Exocoetus evolans, Rochebrune, Faune Sénégalamb., loc. cit. p. 161.

Collection-Vermeulen: Cape Blanco, August.
D. 14; A. 13. Eye 3 in head.

176. **Exocoetus pinnatibarbus** Benn.

Exocoetus pinnatibarbus, Bennett, Proc. Comm. Zool. Soc. I, p. 146; Günther, Catalogue Fishes VI, p. 284.

177. **Exocoetus lineatus** C. V.

Exocoetus lineatus, Günther, Catalogue Fishes VI, p. 287; Steind., Notes Leyden Mus. XVI, p. 75, Liberia; Id., Sitzb. Wien C. p. 362, Canaries; Rochebrune, Faune Sénégalamb., loc. cit. p. 162; Pellegrin, Ann. Monaco VI, 4, p. 30, Canaries.
Both coasts of Atlantic.

Collection-Vermeulen: Gran Canaria, April.
D. 13; A. 10; L. 1. 58.

Head 5- in length (6- in total). Depth $6\frac{2}{3}$ (8). Eye $3\frac{2}{5}$. Snout 4. 39 scales from occiput to dorsal. Pectoral reaching to end of last rays of dorsal. Ventral nearly to base of anal; first ventral ray $3\frac{1}{3}$ in third ray.

Colour: A very sharp limit between the coloured sides and the pale belly. Pale half-band on pectoral conspicuous. Caudal brown.

Length 44 cm.

178. *Exocoetus volitans* L.

Exocoetus volitans, Günther, Catalogue Fishes VI, p. 293;
Steind., Denkschr. Wien, XLIV, p. 48.
Both coasts of Atlantic.

179. *Exocoetus rondeletii* C. V.

Exocoetus rondeletii, Günther, Catalogue Fishes VI, p. 293.
Collection-Vermeulen: Cape Blanco.
D. 11; A. 11; L. l. 50.
Eye $3\frac{1}{3}$ in head. Length 24 cm.
Nomen vulgare: *Volador*.
Not yet recorded from these coasts.
Both coasts of Atlantic.

180. *Exocoetus bahiensis* Ranz.

Exocoetus bahiensis, Günther, Catalogue Fishes VI, p. 293;
Osorio, Jorn. Lisboa (II) V, p. 199, Anno Bom.
Both sides of Atlantic.

AMMODYTIDAE.

181. *Ammodytes siculus* Swains.

Ammodytes siculus, Steindachn., Denkschr. Wien, XLIV,
p. 47, Senegal.
Collection-Vermeulen: Cape Blanco.
Head 5. Depth $2\frac{3}{4}$ in head. Mandible $2\frac{3}{5}$ in head. Eye $6\frac{1}{3}$.
Vomer strongly armed. No distinct folds.
Colour: Silvery side band and rows of brown points on back.
Tip of chin back.
6 Specimens of 10.5 cm.

ATHERINIDAE.

182. *Atherina boyeri* Risso.

Atherina boyeri, Günther, Catalogue Fishes III, p. 394;
Osorio, Jorn. Lisboa (II) V, p. 198, St. Thomé, Capeverde.

183. *Atherina presbyter* C. V.

Atherina presbyter, Günther, Catalogue Fishes III, p. 392; Steind., Sitzb. Wien, LVII, p. 677, Canaries.

184. *Atherina hepsetus* L.

Atherina hepsetus, Günther, Catalogue Fishes III, p. 393; Steind., Sitzb. Wien, LVII, p. 676, Teneriffa.

MUGILIDAE.

185. *Mugil grandisquamis* C. V.

Mugil grandisquamis, Günther, Catalogue Fishes III, p. 410 (doubtful); Rochebrune, Faune Sénéamb., p. 118; Pellegrin, Ann. Monaco VI, 4, p. 32, Senegal.

186. *Mugil schlegeli* Blkr.

Mugil schlegeli, Bleeker, Natuurk. Verh. Holl. Maatsch. Wet. Haarlem 1863, p. 92, pl. XIX, Guinea; Günther, Catalogue Fishes III, p. 410; Rochebrune, Faune Sénéamb., p. 119; Osorio, Jorn. Lisboa (II) V, p. 198, Bissau; Pellegrin, op. cit. p. 32, Ivory-coast.

187. *Mugil breviceps* C. V.

Mugil breviceps, Rochebrune, Faune Sénéamb., p. 119 (a doubtful species).

188. *Mugil cephalus* L.

Mugil cephalus, Günther, Catalogue Fishes III, p. 417; Steind., Sitzb. Wien, XLVII, p. 680; Id. Notes Leyden Mus. XVI, p. 33, Liberia; Rochebrune, Faune Sénéamb., p. 118; Regan, Ann. Mag. N. H. (8) XV, p. 127, Lagos; Pellegrin, op. cit. p. 31.

189. *Mugil oeur* Forsk.

Mugil cephalotus, Günther, Catalogue Fishes III, p. 419.

" *ashanteësis*, Bleeker, Poissons Guinée, p. 91; Steind., Sitzb. Wien, LX, p. 953, Senegal.

" *oeur*, Steind., Denkschr. Wien, XLIV, p. 40, Senegal; Rochebrune, Faune Sénéamb., op. cit. p. 118.

190. *Mugil curema* C. V.

Mugil curema, Steind., Notes Leyden Mus. XVI, p. 34, Liberia.
 „ *brasiliensis*, Günther, Catalogue Fishes III, p. 431,
 (nec. Agass.); Troschel, Arch. Nat. g. 1866, I, p. 221; Osorio, Jorn.
 Lisboa (II) V, 198, Capeverde, St. Thomé.
 Both sides of Atlantic.

191. *Mugil capito* Cuv.

Mugil capito, Günther, Catalogue Fishes III, p. 439; Roche-
 brune, Faune Sénégal, op. cit. p. 118; Pellegrin, Ann. Monaco
 VI, 4, p. 31, Angola.

192. *Mugil auratus* Risso.

Mugil auratus, Günther, Catalogue Fishes III, p. 442; Vin-
 ciguerra, Catalogo verci, p. 323, Canaries; Pellegrin, Ann.
 Monaco VI, 4, p. 31. Lévrierbay-Rufisque.

193. *Mugil saliens* Risso.

Mugil saliens, Günther, Catalogue Fishes III, p. 443; Roche-
 brune, Faune Sénégal, loc. cit. p. 119.

194. *Mugil cryptocheilos* Val.

Mugil cryptocheilos, Günther, Catalogue Fishes III, p. 444;
 Rochebrune, Faune Sénégal, loc. cit. p. 119.

195. *Mugil hypselopterus* Guthr.

Mugil hypselopterus, Günther, Catalogue Fishes III, p. 450;
 Rochebrune, Faune Sénégal, loc. cit. p. 119.

196. *Mugil falcipinnis* C. V.

Mugil falcipinnis, Günther, Catalogue Fishes III, p. 453;
 Steind., Notes Leyden Mus. XVI, p. 35, Liberia; Id., Sitzb.
 Wien, IX, p. 955, Senegal; Rochebrune, Faune Sénégal, loc.
 cit. p. 120; Regan, Ann. Mag. N. H. (8) XV, p. 127, Lagos;
 Boulenger, Freshwater fishes Africa II, p. 357; Pellegrin, Ann.
 Monaco VI, 4, p. 32, Congo.

197. **Mugil labeo** Cuv.

Mugil labeo, Günther, Catalogue Fishes III, p. 453; Vinciguerra, Atti. Soc. It. Sc. Nat. XXXIV, 1893, p. 323, Canaries.

198. **Mugil chelo** Cuv.

Mugil chelo, Günther, Catalogue Fishes III, p. 454; Steind., Sitzb. Wien, LVII, p. 683, Canaries; Rochebrune, Faune Sénégalamb., loc. cit. p. 120; Osorio, Jorn. Lisboa (II) V, p. 198, St. Thomé.

199. **Mugil nigrostrigatus** Günther.

Mugil nigrostrigatus, Günther, Catalogue Fishes III, p. 457; Troschel, Arch. Nat. g. 1866, I, p. 219, Capeverde.

200. **Mugil hoeferi** Steind.

Mugil hoeferi, Steind., Denkschr. Wien, XLV, p. 11, Gorea; Pellegrin, Ann. Monaco VI, 4, p. 32, Lévrierbay.

201. **Mugil dumerilii** Steind.

Mugil dumerilii, Steind., Sitzb. Wien, LX, p. 959.

202. **Mugil pulchellus** Troschel.

Mugil pulchellus, Troschel, Arch. Nat. gesch. 1866, I, p. 222, Capeverde.

203. **Mugil productus** Fischer.

Mugil productus, Fischer, Jahrb. Hamburg, Wiss. Anstalten, 1885, p. 69, Eloby.

204. **Myxus curvidens** C. V.

Myxus curvidens, Günther, Catalogue Fishes III, p. 467; Steind., Denkschr. Wien, XLIV, p. 42, Senegal.

POLYNEMIDAE.205. **Pentanemus quinquarius** L.

Pentanemus quinquarius, Günther, Catalogue Fishes II, p. 331; Rochebrune, Faune Sénégalamb., op. cit. p. 93; Osorio, Jorn.

Lisboa (II) V, p. 197, St. Thomé, Angola; Pellegrin, Ann. Monaco VI, 4, p. 33, Angola-Konakry; Ehrenbaum, Fischerbote V, 1913, p. 313, Cameroon; Bouleng. Poiss. Bass. Congo 1901, p. 360.

Pentanemus macronemus, Pel, Bijdr. t/d. Dierkunde, 1851, p. 9, Guinea.

Collection-Vermeulen: Coast Senegal.

D. VIII, I, 15—16; A. III, 28—30.

Head $3\frac{2}{5}$ — $3\frac{3}{5}$ in body. Depth 3 — $3\frac{1}{2}$. Eye 4 — $4\frac{1}{2}$. First dorsal and anal spine always minute; upper caudal lobe $2\frac{1}{6}$ — $2\frac{2}{3}$. Middle caudal ray $3\frac{2}{5}$ in upper. Pectoral $2\frac{2}{3}$ — $2\frac{3}{4}$.

Length 21.5—27 cm.

Nomen vulgare: *Gerdî*.

Both sides of Atlantic.

206. *Polynemus quadrifilis* C. V.

Polynemus quadrifilis, Steind., Sitzb. Wien, LX, 1870, p. 698; Rochebrune, Faune Sénégal., loc. cit. p. 92; Pellegrin, Ann. Monaco VI, 4, p. 32. Ehrenbaum, Fischerbote V, 1913, p. 309, Cameroon.

207. *Galeoïdes decadactylus* Bl.

Galeoïdes decadactylus, Pellegrin, Ann. Monaco VI, 4, p. 33, Konakry-Congo; Regan, Ann. Mag. N. H. (8) XV, p. 128, Lagos; Ehrenbaum, Fischerbote V, 1913, p. 312, Cameroon.

„ *polydactylus*, Günther, Catalogue Fishes II, p. 332; Steind., Sitzb. Wien, LX, 1870, p. 701, Senegal; Id. Notes Leyden Mus. XVI, p. 16; Rochebrune, Faune Sénégal., p. 93; Osorio, Jorn. Lisboa (II) V, p. 197, St. Thomé, Angola.

Collection-Vermeulen: Coast Senegal.

D. VIII, I, 14; A. III, 11; P. X + 10; L. l. 46.

Head 3. Depth $3\frac{1}{3}$ in body; palatines with, vomer without teeth. Longest dorsal spine $4\frac{1}{4}$, longest soft ray $5\frac{1}{2}$ in body. Anal falcate, tips of first ray reaching tips of last. Upper caudal lobe $3\frac{1}{2}$ in total. Middle caudal rays $3\frac{3}{4}$ in upper rays. Pectoral $3\frac{4}{5}$ in body.

Nomen vulgare: *Pescado de Bacalao*.

SPHYRAENIDAE.

208. *Sphyraena vulgaris* C. V.

Sphyraena vulgaris, Vinciguerra, Atti. Soc. It. Sci. Nat. XXXIV, p. 322, 1893, Canaries.

209. *Sphyraena guachancho* C. V.

Sphyraena guachancho, Regan, Ann. Mag. N. H. (8) XV, p. 128, Lagos; Ehrenbaum, Fischerbote VI, 1914, p. 109, Cameroon.

" *afra*, Peters, Monb. Berl. Ac. 1844, p. 82; 1876, p. 842; 1877, p. 622.

" *dubia*, Bleeker, Poissons Guinée, loc. cit. p. 70; Steindachner, Notes Leyden Mus. XVI, p. 32, Liberia; Pellegrin, Ann. Monaco VI, 4, p. 34. (Separate species after Ehrenbaum.) Both sides of Atlantic.

210. *Sphyraena jello* C. V.

Sphyraena jello, Günther, Catalogue Fishes II, p. 337; Steind., Denkschr. Wien, XLIV, p. 39.

211. *Sphyraena bocagei* Osorio.

Sphyraena bocagei, Osorio, Jorn. Lisboa (II) II, p. 114, St. Thomé.

212. *Sphyraena hupferi* Fischer.

Sphyraena hupferi, Fischer, Jahrb. Hamburg, Wiss. Anstalten 1885, p. 70, (Cameroon).

STROMATEIDAE.

213. *Psenes leucurus* C. V.

Psenes leucurus, Günther, Catalogue Fishes II, p. 495; Bleeker, cit. in Poissons Côte Guinée, loc. cit. p. 6; An Indo-pacific species.

214. *Nomeus gronovii* Gm.

Nomeus gronovii, Günther, Catalogue Fishes II, p. 387; Regan, Ann. Mag. N. H. (7) X, p. 122. Both sides of Atlantic.

215. *Lirus ovalis* C. V.

Crius bennettii, Valenc., Iles Canaries, p. 43.

" *bertheloti*, Valenc., Iles Canaries, p. 45, pl. 9.

Centrolophus ovalis, Günther, Catalogue Fishes II, p. 404; Steind., Sitzb. Wien, LVII, 1868, p. 991, Teneriffa.

Lirus ovalis, Regan, Ann. Mag. N. H. (7) X, p. 198.

216. *Stromateus fiatola* L.

Stromateus fiatola, Günther, Catalogue Fishes II, p. 397; Regan, Ann. Mag. N. H. (7) X, p. 203; Pellegrin, Ann. Monaco VI, 4, p. 34, Cape Blanco.

Collection-Vermeulen: Coast Senegal.

D. 46; A. 36; L. l. $12\frac{1}{2}$.

Head $5\frac{2}{3}$ in total; depth $2\frac{2}{3}$ — $2\frac{7}{9}$. Eye 4. Interorbital $2\frac{1}{2}$. Maxillary 4, short, reaching anterior border of eye. Dorsal and anal falcate; longest dorsal = anal rays equal to pectoral, $6\frac{1}{3}$ in total, $1\frac{1}{3}$ in head. Upper caudal lobes 3 in total, $\frac{4}{5}$ th of depth. Ventrals rudimentary.

Colour: Purplish blue; belly silvery; a dark streak under eye. Pectoral and tips of dorsal and anal deep blue. Inner side of pectoral dark purplish, not black. Caudal golden with a dusky edge.

3 Specimens of 20 cm.

Nomen vulgare: *Pampa*.

N.B. The proportions given by Regan differ considerably from those usually given by the authors.

217. *Stromateus microchirus* C. V.

Stromateus microchirus, Günther, Catalogue Fishes II, p. 398; Regan, Ann. Mag. N. H. (7) X, p. 204; Pellegrin, Ann. Monaco, VI, 4, p. 34, Nouachott.

ICOSTEIDAE.

218. *Schedophilus bertheloti* Val.

Crinus bertheloti, Valenc., Iles Canaries, p. 45.
Both sides of Atlantic.

MACRURIDAE.

219. *Macrurus sclerorhynchus* Val.

Macrurus sclerorhynchus, Valenc., Iles Canaries, p. 80, pl. 14; Günther, Catalogue Fishes IV, p. 394.

GADIDAE.**220. *Mora mediterranea* Risso.**

Mora mediterranea, Günther, Catalogue Fishes IV, p. 342;
Rochebrune, Faune Sénégal., loc. cit., p. 319; Steind., Sitzb.
Wien, LVII, 1868, p. 708, Canaries.

221. *Merluccius vulgaris* Flem.

Merluccius vulgaris, Günther, Catalogue Fishes IV, p. 344;
Steindachner, Sitzb. Wien, LVII, p. 708; Vinciguerra, Atti Soc.
Ital. Scienc. Nat. XXXIV, p. 327, Canaries.

222. *Phycis mediterraneus* Delaroche.

Phycis mediterraneus, Günther, Catalogue Fishes IV, p. 354;
Rochebrune, Faune Sénégal., loc. cit. p. 137.
„ *limbatus*, Valenc., Iles Canaries, p. 78.

223. *Onos guttatus* Coll.

Onos guttatus, Steind., Sitzb. Wien, C, 1891, p. 360, Canaries.

BERYCIDAE.**224. *Holocentrus hastatu* C. V.**

Holocentrum hastatum, Günther, Catalogue Fishes I, p. 39;
Troschel, Arch. Nat. g. 1866, I, p. 200, Capeverde; Steind.,
Denkschr. Wien, XLV, p. 1, Gorea; Rochebrune, Faune Séné-
gamb., loc. cit. p. 60; Osorio, Jorn. Lisboa (II) V, p. 195, Cape-
verde, Gulf of Guinea.

225. *Holocentrus adscensionis* Osbeck.

Holocentrum longipinne, Günther, Catalogue Fishes I, p. 28;
Osorio, Jorn. Lisboa (II) II, p. 98, St. Thomé.
Both coasts of Atlantic.

226. *Beryx decadactylus* Cuv.

Beryx decadactylus, Günther, Catalogue Fishes I, p. 16; Steind.,
Sitzb. Wien, LVI, 1867, p. 603; Lowe, Pr. Zoöl. Soc. 1839, p. 76,
Madeira.
Both sides of Atlantic.

226a. **Beryx splendens** Lowe.

Beryx splendens, Lowe, Trans. Zoöl. Soc. II, p. 174, Madeira;
Günther, Catalogue Fishes I, p. 16.

Both sides of Atlantic.

Both species occurring no doubt in the regions treated here,
though not yet found so far as I know.

227. **Polymixia nobilis** Lowe.

Polymixia nobilis, Günther, Catalogue Fishes I, p. 16; Steind.,
Sitzb. Wien, C, 1891, p. 336, Canaries.

228. **Myripristis viridensis** Trosch.

Myripristis viridensis, Troschel, Arch. Natg. 1866, I, p. 199,
Capeverde; Osorio, Jorn. Lisboa (II) V, p. 195, Principe.

229. **Myripristis jacobus** C. V.

Myripristis jacobus, Osorio, Jorn. Lisboa (II) V, p. 195, Anno
Bom.

Both coasts of Atlantic.

CENTRARCHIDAE.230. **Parakuhlia boulengeri** Pell.

Parakuhlia boulengeri, Pellegrin, Ann. Monaco VI, 4, p. 36,
Gabon.

CYPHOSIDAE.231. **Cyphosus boscii** Lac.

Pimblepterus boscii, Günther, Catalogue Fishes I, p. 497; Peters,
Monatsb. Ac. Berlin 1876, p. 246, Victoria.

„ *incisor*, Valenc., Iles Canaries, p. 47. (nec. Cuv.)

Kyphosus sectatrix, Jordan & Evermann, Fishes N. & M. Am.,
p. 1387.

Both sides of Atlantic.

LOBOTIDAE.232. **Lobotes surinamensis** Bl.

Lobotes auctorum, Gnthr, Catalogue Fishes I, p. 338; Osorio,
Jorn. Lisboa (II) II, p. 103, St. Thomé.

„ *surinamensis*, Pellegr., Ann. Monaco VI, 4, p. 38,
Dalomey.

Both sides of Atlantic.

SERRANIDAE.**SERRANINAE.****233. *Apsilus fuscus* C. V.**

Apsilus fuscus, Günther, Catalogue Fishes I, p. 82; Rochebrune, Faune Séné gamb., loc. cit. p. 62.
(Provisionally placed here.)

234. *Morone labrax* L.

Labrax lupus, Steind., Sitzb. Wien, C, 1891, p. 355, Canaries; Rochebrune, Faune Séné gamb., loc. cit. p. 60.

235. *Morone punctata* Bl.

Labrax punctata, Rochebrune, Faune Séné gamb., loc. cit. p. 61; Steind., Sitzb. Wien, C, 1891, p. 355, Canaries.

Morone punctata, Boulenger, Catalogue Fishes I, p. 131; Pellegrin, Ann. Monaco VI, 4, p. 38, Lévrier bay.

Collection-Vermeulen: Cape Blanco, Senegambia.
Fine specimens, up to 42 cM.

236. *Polyprion americanus* Bl. Schn.

Polyprion cernium, Steind., Sitzb. Wien, C, 1891, p. 356, Canaries.

" *americanus*, Boulenger, Catalogue Fishes I, p. 148.
Both sides of Atlantic.

237. *Epinephelus guttatus* Bl.

Serranus guttatus, Osorio, Jorn. Lisboa (II) V, p. 195, Angola.

Epinephelus guttatus, Boulenger, Catalogue Fishes I, p. 176.
Both sides of Atlantic.

238. *Epinephelus nigri* Guthr.

Serranus cruentatus, Peters, Monatsb. Berlin 1876, p. 244, Victoria.

" *nigri lineo-ocellatus*, Rochebrune, Faune Séné gamb., loc. cit. p. 62—63.

" " Osorio, Jorn. Lisboa (II) V, p. 195, Gulf of Guinea.

Epinephelus nigri, Boulenger, Catalogue Fishes I, p. 178;
Pellegrin, Ann. Monaco VI, 4, p. 38, St. Louis.

239. *Epinephelus punctatus* L.

Serranus ouatalibi, Rochebrune, Faune Sénégal., loc. cit. p. 63.
Epinephelus punctatus, Boulenger, Catalogue Fishes I, p. 183.
Both sides of Atlantic.

240. *Epinephelus taeniops* C. V.

Serranus taeniops, Troschel, Arch. Naturg. 1866, I, p. 195,
Capeverde; Osorio, Jorn. Lisboa (II) V, p. 195, Gulf of Guinea.
Epinephelus taeniops, Boulenger, Catalogue Fishes I, p. 186;
Pellegrin, Ann. Monaco VI, 4, p. 39, Cape Blanco.
Both sides of Atlantic.

241. *Epinephelus alexandrinus* C. V.

Epinephelus alexandrinus, Boulenger, Catalogue Fishes I,
p. 200, Capeverde; Pellegrin, Ann. Monaco VI, 4, p. 39.

242. *Epinephelus goreënsis* C. V.

Serranus goreënsis, Rochebrune, Faune Sénégal., loc. cit.
65; Steind., Denkschr. Wien, XLIV, p. 6; Troschel, Arch.
Naturg. 1866, I, p. 196, Capeverde; Osorio, Jorn. Lisboa (II) V,
p. 195, Angola.

Epinephelus goreënsis, Boulenger, Catalogue Fishes I, p. 204;
Pellegrin, Ann. Monaco VI, 4, p. 39, Lévrierbay, Senegal.

Collection-Vermeulen: Senegambia.

Head with flap $3\frac{1}{3}$ in total. Praeopercle with four spines, in
one specimen atrophied to a single crenulate spine at the angle.
Gillrakers long, much longer than next fringes. Here and there
a few scales are to be seen on the maxillary. Vertical fins with
scaly membrane. Ventrals very short, reaching $\frac{2}{3}$ of the distance
to vent.

Colour: Dorsal with a distinct violet edge.

N.B. These characters distinguish the fish fairly well from
Epinephelus alexandrinus C. V. to which it is closely allied.

Length up to 36 cm.

Nomen vulgare: *Avaia*.

243. *Epinephelus caninus* Val.

Serranus caninus, Valenc., Iles Canaries, p. 10; Steind., Sitzb. Wien, LXXXVI, 1882, p. 65, pl. II.

Epinephelus caninus, Boulenger, Catalogue Fishes I, p. 205.

244. *Epinephelus aeneus* Geoffr.

Serranus aeneus, Rochebrune, Faune Sénégal, loc. cit. p. 66; Steind., Denkschr. Wien, XLIV, p. 21, Senegal; Osorio, Jorn. Lisboa (II) V, p. 195, Angola.

Epinephelus aeneus, Boulenger, Catalogue Fishes I, p. 223; Pellegrin, Ann. Monaco VI, 4, p. 39, Senegal.

Collection-Vermeulen: Cape Blanco.

D. XI, 15; A. III, 8, 110 vertical rows of scales.

Second anal spine 6 in head, without flap, third spine $4\frac{1}{3}$, pectoral $1\frac{3}{4}$.

Colour: The 5 oblique crossbars are only evident in the young (37—50 mm.).

Several specimens, up to 53 cm.

N.B. Probably confused by the fishermen with *E. ruber* Bloch.

Nomen vulgare: *Cherne de Morro*.

245. *Epinephelus adscensionis* Osbeck.

Serranus capreolus, Osorio, Jorn. Lisboa (II) V, p. 195, St. Thomé, Angola.

Epinephelus ascensionis, Boulenger, Catalogue Fishes I, p. 228. Both sides of Atlantic.

246. *Epinephelus gigas* Brunn.

Serranus fimbriatus, Valenc., Iles Canaries, p. 8.

" *gigas*, Osorio, Jorn. Lisboa (II) V, p. 195, Angola.

Epinephelus gigas, Boulenger, Catalogue Fishes I, p. 231.

Both sides of Atlantic.

Collection-Vermeulen: Cape Blanco.

Head $2\frac{1}{2}$. Depth $3\frac{2}{9}$ in length without caudal. Eye $5\frac{1}{2}$ in head, snout $4\frac{1}{3}$. Lower jaw strongly projecting. Maxillary $2\frac{1}{3}$ in head, naked; bony interorbital 7. Praeopercle with sharp, closely set serrae on vertical limb only. 2 Pairs of small canines on each side. Longest (third) dorsal spine $3\frac{1}{3}$ in head, second anal spine about 4.

Caudal rounded. Pectoral 2-. Ventral $2\frac{2}{9}$ in head, nearly reaching vent.

Colour: Plain chocolate. All the fins shading off to black to the margins, save the pectoral, which has a broad pale band of about $\frac{1}{3}$ its length. Axil largely white. Edge of praeorbital black. Palatine black with pale blotch.

Length 30 cM.

Nomen vulgare: *Meru*.

Both sides of Atlantic.

247. *Epinephelus esonue* Ehrenbaum.

Epinephelus esonue, Ehrenbaum, Fischerbote VI, 1914, p. 293, Cameroon.

248. *Epinephelus morio* C. V.

Serranus erythrogaster, Osorio, Jorn. Lisboa (II) V, p. 195, St. Thomé.

Epinephelus morio, Boulenger, Catalogue Fishes I, p. 237.
Both sides of Atlantic.

249. *Epinephelus afer* Bl. (?)

(?) *Serranus armatus*, Osorio, Jorn. Lisboa (II) III, 1894, p. 74, St. Thomé.

Both sides of Atlantic.

250. *Epinephelus ruber* Bl.

Serranus emarginatus, acutirostris fuscus, Valenc., Iles Canaries, p. 9—11.

" *acutirostris*, Rochebrune, Faune Sénégalamb., p. 66.

" *undulosus*, Steind., Sitzb. Wien, LXXXVI, p. 63;
Osorio, Jorn. Lisboa (II) V, p. 195, Angola.

" *fuscus*, Steind., Denkschr. Wien, XLV, p. 3, Gorea.

" *simonyi*, Steind., Sitzb. Wien, C, 1891, p. 352 (plate).

Epinephelus ruber, Boulenger, Catalogue Fishes I, p. 267.

Collection-Vermeulen: Cape Blanco.

Nomen vulgare: *Cherne de Ley*.

Both sides of Atlantic.

251. *Serranus atricauda* Gnthr.

Serranus atricauda, Steind., Sitzb. Wien, C, 1891, p. 352, Canaries; Boulenger, Catalogue Fishes I, p. 282.

252. *Serranus cabrilla* L.

Serranus cabrilla, Osorio, Jorn. Lisboa (II) V, p. 195, Gulf of Guinea; Boulenger, Catalogue Fishes I, p. 283; Pellegrin, Ann. Monaco VI, 4, p. 40, Mossamédès.

" " var. *bicolor*, Steind., Sitzb. Wien, C, 1891, p. 351, Canaries.

253. *Serranus scriba* L.

Serranus papilionaceus, Rochebrune, Faune Sénégal., loc. cit. p. 62.

" *scriba*, Pellegrin, Ann. Monaco VI, 4, p. 40, Cape Blanco.

Collection-Vermeulen: *Faux Cap*.

D. XI, 15; A. III, 7; L. l. 72.

The largest specimen has the frontal profile much convex, like a *Rhypticus*.

Colour: Cross bands more or less coalescent.

Length 8.5—22 cM.

254. *Anthias sacer* Bl.

Anthias sacer, Steind., Sitzb. Wien, C, 1891, p. 355, Canaries; Osorio, Jorn. Lisboa (II) V, p. 195, St. Thomé; Pellegrin, Ann. Monaco VI, 4, p. 40, Mossamédès.

Collection-Vermeulen: *Cape Blanco*, 2 specimens of 18 cM.

GRAMMISTINAE.

255. *Rhypticus arenatus* C. V.

Rhypticus arenatus, Osorio, Jorn. Lisboa (II) V, p. 195, Angola, Anno Bom; Boulenger, Catalogue Fishes I, p. 349.

Both sides of Atlantic.

256. *Rhypticus saponaceus* Bl. Schn.

Rhypticus saponaceus, Peters, Monatsb. Berlin 1876, p. 245, Victoria; Rochebrune, Faune Sénégal., p. 67; Osorio, Jorn. Lisboa (II) V, p. 195, Gulf of Guinea.

Both sides of Atlantic.

PRIACANTHINAE.

257. *Priacanthus cruentatus* Lac.

Priacanthus cruentatus, Boulenger, Catalogue Fishes I, p. 353.
 " *boops* partim, Valenc., Iles Canaries, p. 12, pl. III,
 Vinciguerra, Atti Soc. It. Sc. XXXIV, 1893, p. 307.
 Both sides of Atlantic.

258. *Priacanthus arenatus* C. V.

Priacanthus macrophthalmus, Troschel, Arch. Naturg. 1866,
 I, p. 198, Capeverde, Rochebrune, Faune Sénégalamb., loc. cit. p. 70,
 (teste Steind. Denkschr. Wien XLIV, p. 24).
 Both sides of Atlantic.

POMATOMINAE.

259. *Pomatomus telescopium* Risso.

Pomatomus telescopium, Günther, Catalogue Fishes I, p. 250;
 Osorio, Jorn. Lisboa (II) V, p. 195, St. Thomé; Vinciguerra,
 Atti Soc. It. Sc. Nat. XXXIV, 1893, p. 307, Canaries.

CHILODIPTERINAE.

260. *Apogon rex* Cuv.

Apogon imberbis, Günther, Catalogue Fishes I, p. 230; Osorio,
 Jorn. Lisboa (II) V, p. 195, Gulf of Guinea.
 Both sides of Atlantic.

LUTJANINAE.

261. *Lutjanus griseus* (C. V.) Gnthr.

Mesoprion griseus, Troschel, Arch. Naturg. 1866, I, p. 197,
 Capeverde.

Lutjanus griseus, Pellegrin, Ann. Monaco V, 4, p. 41, Senegal.
Lutjanus jocu, (C. V.) Rochebrune, Faune Sénégalamb., loc. cit.
 p. 68; Osorio, Jorn. Lisboa (II) V, p. 195, Gulf of Guinea.

Mesoprion goreënsis, Cuv. Val., Hist. N. Poissons VI, p. 540.
 Perhaps identical with the West-Indian *L. Griseus* L.

262. *Lutjanus guineënsis* Blkr.

Lutjanus guineënsis, Bleeker, Poissons Guinée, p. 46; Pellegrin, Ann. Monaco VI, 4, p. 41, Dahomey-Bassam; Ehrenbaum, Fischerbote VI, 1914, p. 290.

Both sides of Atlantic.

263. *Lutjanus eutactus* Blkr.

Lutjanus eutactus, Bleeker, Poissons Guinée, p. 51; Osorio, Jorn. Lisboa (II) V, p. 195, St. Thomé, Angola.

264. *Lutjanus dentatus* Dum.

Mesoprion dentatus, Arch. Mus. X, p. 245 (nec Günther).

Lutjanus dentatus, Rochebrune, Faune Sénégalamb., l. c. p. 67.

„ *eutactus*, Steind., Notes Leyden Mus. XVI, 1895, p. 3; Liberia, Rochebrune, Faune Sénégalamb., loc. cit. p. 69; Ehrenbaum, Fischerbote VI, 1914, p. 291, Cameroon.

Genyroe canina, Steind., Sitzb. Wien, LX, 1869, p. 305, Senegal. Probably identical with *L. cyanopterus* C. V. = *L. cubera* Poey (West Indian).

265. *Lutjanus maltzani* Steind.

Lutjanus maltzani, Steindachner, Denkschr. Wien, XLIV, p. 23, Senegal; Rochebrune, Faune Sénégalamb., l. c. p. 70; Osorio, Jornal Lisboa (II) V, p. 195, Gulf of Guinea.

266. *Lutjanus agennes* Blkr.

Lutjanus agennes, Bleeker, Poissons Guinée, p. 49; Rochebrune, Faune Sénégalamb., p. 69; Osorio, Jornal Lisboa (II) V, p. 195, St. Thomé; Pellegrin, Ann. Monaco VI, 4, p. 41, Gabon-Congo.

267. *Lutjanus fulgens* C. V.

Lutjanus fulgens, Rochebrune, Faune Sénégalamb., l. c. p. 69.

268. *Lutjanus endecacanthus* Blkr.

Lutjanus endecacanthus, Bleeker, Poissons Guinée, p. 48.

CIRRHITINAE.

269. *Cirrhitus atlanticus*. Osorio.

Cirrhitus atlanticus, Osorio, Jornal Lisboa (II) III, p. 138, St. Thomé.

SCIAENIDAE.

270. *Umbrina cirrhosa* L.

Umbrina cirrhosa, Günther, Catalogue Fishes II, p. 274 (to Cape).

271. *Umbrina cirrhosa* L. var *canariensis* Val.

Umbrina canariensis, Valenciennes, Iles Canaries, p. 24; Günther, Catalogue Fishes II, p. 274.

" *cirrhosa canariensis*, Steindachner, Sitzungsber. Wien, C, 1891, p. 359; Id. Denkschr. Wien, XLV, p. 7, Gorea; Rochebrune, Faune Sénégalamb., l. c. p. 87; Osorio, Jornal Lisboa (II) V, p. 197, Angola.

Collection-Vermeulen: Faux Cap Blanco.

D. X, I, 26; A. II, 7.

Depth $3\frac{2}{5}$ in total. Profile very steep, reaching its highest point at the beginning of spinous dorsal.

Colour: exactly as given by Steindachner. Length 29 cM.

272. *Umbrina ronchus* Val.

Umbrina ronchus, Valenciennes, Iles Canaries, p. 24.

" " Günther, Catalogue Fishes II, p. 275; Steindachner, Denkschr. Wien, XLV, p. 8, Gorea, Canaries; Sitzungsber. Wien, C, 1891, p. 359, Canaries; Pellegrin, Ann. Monaco VI, 4, p. 45, Cape Blanco.

Collection-Vermeulen: Cape Blanco.

D. X—I, 27 (!); A. II, 8; L. l. 52.

Depth $3\frac{4}{5}$ in total. Head $4\frac{1}{2}$ -. Eye 6. Snout 3-. Length of only specimen 63 cM. It bears an *Anilocra capensis* Miln. Edw.

Nomen vulgare: *Berrugato*.

273. *Umbrina valida* Jord. & Gunn.

Umbrina valida, Jordan & Gunn, Proc. Acad. Philad., 1898, p. 342, Canaries.

274. *Sciaena senegalensis* C. V.

Sciaena senegalensis, Günther, Catalogue Fishes, p. 290; Rochebrune, Faune Sénégalamb., l. c. p. 87.

275. *Sciaena aquila* Risso.

Sciaena aquila, Günther, Catalogue Fishes II, p. 292; Pellegrin, Ann. Monaco VI, 4, p. 42, Lévrierbay.

Collection-Vermeulen: Faux Cap.

a. juv. D. X, I, 27; A. II, 7.

Seven very strong denticulations at corner of preopercle.

Length 10 cm.

b. adults. D. X, I, 29; A. II, 7; L. l. \pm 55.

Depth $5\frac{1}{2}$ in total. Eye 7 i. h. $1\frac{3}{4}$ in snout. Denticulations of preopercle scarcely perceptible. Scales much rubbed off, therefore no blotches visible on opercle. An inky axillary spot.

Length 72 cm.

Nomen vulgare: *Corbina*.

276. *Sciaena epipercus* Blkr.

Rhinoscion epipercus, Bleeker, Poissons Guinée, l.c. p. 64.

Sciaena epipercus, Steind., Sitzb. Wien LX, 1870, p. 695, Senegal; Rochebrune, Faune Sénéamb., l.c. p. 88; Ehrenbaum, Fischerbote VI, 1914, p. 194, Cameroon.

277. *Sciaena sauvagei* Rochebr.

Sciaena sauvagei, Rochebrune, Faune Sénéamb., l.c. p. 88, pl. III.

278. *Sciaena (Corvina) moorii* Gnthr.

Corvina moorii, Günther, Ann. Mag. Nat. Hist. XVI, 1865, p. 48. See also Rochebrune, Faune Sénéamb., l.c. p. 90.

279. *Sciaena (Corvina) nigra* Bl. Schn.

Corvina nigra, Günther, Catalogue Fishes II, p. 296; Valenciennes, Iles Canaries, p. 23; Steind., Denkschr. Wien, XLIV, p. 33, Senegal; Rochebrune, Faune Sénéamb., l.c. p. 90; Pellegrin, Ann. Monaco VI, 4, p. 42; Lévrierbay.

Sciaena umbra, Jordan and Eigenmann, Sciaenidae of America and Europe, Report U.S. Fish Comm. for 1886, p. 406.

Collection-Vermeulen: Cape Blanco—Rufisque.

D. X, I, 23— $24\frac{1}{2}$; A. II, 7; L. l. 49—53.

Eye 6 in head. Second anal spine $1\frac{1}{2}$ —2 in longest soft ray.

Colour: the smaller ones have conspicuous dark spots on many scales.

Length up to 53 cM.

Nomen vulgare: *Berrugato*.

280. *Sciaena (Corvina) nigrita* C. V.

Corvina nigrita, Günther, Catalogue Fishes II, p. 297; Steind., Sitzb. Wien, LX, 1870, p. 692, Senegal; Rochebrune, Faune Sénéamb., l. c. p. 90; Osorio, Jornal Lisboa (II) V, p. 197, Bissau; Pellegrin, Ann. Monaco VI, 4, p. 42, Librévillebay, Hann; Ehrenbaum, Fischerbote VI, 1914, p. 195, Cameroon.

" *clavigera*, Cuvier en Valenc., op. cit. V, p. 101.

281. *Sciaena (Corvina) nigripinnis* Gnthr.

Corvina nigripinnis, Günther, Ann. Nat. Hist. (4) XIV, p. 453, Cameroon.

Sciaena nigripinnis, Regan, Ann. Mag. Nat. Hist. (8) XV, p. 127, Lagos (name only).

Corvina nigripinnis, Pellegrin, Ann. Monaco VI, 4, p. 43, Librévillebay-Konakry.

282. *Otolithus nebulosus* C. V.

Otolithus nebulosus, Pellegrin, Ann. Monaco VI, 4, p. 44, Mossamédes.

Both sides of Atlantic.

283. *Otolithus senegalensis* C. V.

Pseudotolithus typus, Bleeker, Poissons Guinée, l. c. p. 60.

Otolithus senegalensis, Günther, Catalogue Fishes II, p. 306; Steind., Sitzb. Wien, LX, 1870, p. 687, Senegal; Notes Leyden Mus. XVI, p. 17, Liberia; Rochebrune, Faune Sénéamb., l. c. p. 91; Pellegrin, Ann. Monaco VI, 4, p. 43; Ehrenbaum, Fischerbote VI, 1914, p. 197, Cameroon.

Collection-Vermeulen: Cape Blanco.

D. X, I, 27—31; A. II, 7; L. l. 51; L. tr. 7—9.

Head = depth = $4\frac{2}{7}$ in total. Eye 6^+ . Snout $4\frac{1}{3}$ i. h. Interorbital equal to eye. Maxillary $2\frac{1}{3}$ i. h., reaching considerably past eye. Lower jaw much projecting. Profile fairly straight up to dorsal fin. Dentition: villiform internal teeth in upper jaw; in lower jaw

more externally, the other teeth being all more or less canine-like, about 10 in one row; in the front part of the praemaxillary there is a second, short row of 2 teeth on both sides. Some small teeth in the lower jaw scattered between the larger ones. Nine strong gillrakers on lower arch. Corner of praeopercle denticulate. Vertical fins not scaled. Third dorsal spine 2- in head. Longest ray $2\frac{4}{7}$, Second anal spine $4\frac{1}{2}$ i. h. First soft ray $2\frac{1}{3}$. Pectoral = ventral = $1\frac{7}{12}$ i. h. Ventral spine $3\frac{1}{4}$ i. h. Ventral not filamentous. Pores: a pair of small ones in lower lip and one on symphysis. A pair of large slitlike pores about $\frac{1}{7}$ the distance from foreend of lower jaw.

Colour: oblique streaks on belly conspicuous. Head immaculate. Axil black, shading off on inner side and outer side of first ray of pectoral. First dorsal membrane dotted with black points. Membrane of 2nd dorsal with 3 rows of spots, the upper one in the middle of the fin. (Cf. Steindachner).

Length 38—61 cm.

Nomen vulgare: *Melusa*.

284. *Otolithus macrognathus* Blkr.

Otolithus macrognathus, Bleeker, Poissons Guinée, l. c. p. 61, Steind., Denksch. Wien, LXV, p. 7, Gorea; Rochebrune, Faune Sénégalamb., l. c. p. 92; Osorio, Jorn. Lisboa (II) V, p. 197.

285. *Otolithus brachygnathus* Blkr.

Otolithus brachygnathus, Bleeker, Poissons Guinée, l. c. p. 62; Rochebrune, Faune Sénégalamb., l. c. p. 91; Osorio, Jorn. Lisboa (II) V, p. 197, Angola; Pellegrin, Ann. Monaco VI, 4, p. 44, Senegal-Congo; Ehrenbaum, Fischerbote VI, 1914, p. 197, Cameroon.

286. *Larimus peli* Blkr.

Larimus peli, Bleeker, Poissons Guinée, l. c. p. 63; Rochebrune, Faune Sénégalamb., l. c. p. 87; Ehrenbaum, Fischerbote VI, 1914, p. 199, Cameroon.

GERRIDAE.

287. *Gerres*¹⁾ *bilobus* C. V.

Gerres bilobus, Rochebrune, Faune Sénégalamb., l. c. p. 128.

¹⁾ Not subdivided for practical reasons.

288. *Gerres nigri* Gnthr.

Gerres nigri, Günther, Catalogue Fishes I, p. 347; Rochebrune, Faune Sénégal., l. c., p. 128.

289. *Gerres melanopterus* Blkr.

Gerres melanopterus, Bleeker, Poissons Guinée, l. c., p. 44, pl. VIII; Steind., Sitz. Wien, LV, 1867, p. 518, Monrovia; Id. LX, 1870, p. 961, Senegal; Id., Notes Leyden Mus. XVI, p. 12, Liberia; Rochebrune, Faune Sénégal., l. c., p. 128; Osorio, Jorn. Lisboa (II) V, p. 198, Gulf of Guinea; Pellegrin, Ann. Monaco VI, 4, p. 45, Dakar, Konakry; Ehrenbaum, Fischerbote VI, 1914, p. 255, Cameroon.

290. *Gerres octactis* Blkr.

Gerres octactis, Bleeker, Poissons Guinée, l. c., p. 43; Pellegrin, Ann. Monaco VI, 4, p. 45, Bassam.

After Steindachner identical with the preceeding species.

PRISTIPOMATIDAE.**291. *Pristipoma jubelini* C. V.**

Pristipoma jubelini, Steind., Sitzb. Wien, LX, 1870, p. 675, Senegal; Rochebrune, Faune Sénégal., l. c. p. 70; Boulenger, Poissons du bassin du Congo, p. 387. Regan, Ann. Mag. Nat. Hist. (8) XV, p. 126, Lagos; Pellegrin, Ann. Monaco VI, 4, p. 45, Senegal-Gabon; Ehrenbaum, Fischerbote VI, 1914, pl. 255, Cameroon.

292. *Pristipoma hasta* Bl.

Pristipoma hasta, Günther, Catalogue Fishes I, p. 289; Capello, Jorn. Lisboa (I) III, 1871, p. 196, Angola.

An indopacific species.

293. *Pristipoma rogeri* C. V.

Pristipoma rogeri, Günther, Catalogue Fishes I, p. 298; Steind., Sitzb. Wien, LX, 1870, p. 680; Rochebrune, Faune Sénégal., l. c. p. 71; Osorio, Jorn. Lisboa (II) V, p. 196, Angola.

294. **Pristipoma bennettii** Lowe.

Pristipoma bennetti, Günther, Catalogue Fishes I, p. 298; Valenciennes, Iles Canaries, p. 26; Steind., Sitzb. Wien, LX, 1870, p. 681, Senegal; Rochebrune, Faune Sénégal, l. c. p. 71; Osorio, Jorn. Lisboa (II) V, p. 196, Capeverde, Gulf of Guinea, Angola; Pellegrin, Ann. Monaco VI, 4, p. 46, Mossamédès.

" *ronchus*, Valenciennes, Iles Canaries, p. 25.

Collection-Vermeulen: Cape Blanco.

Head $3\frac{1}{2}$ in total. Depth $3\frac{1}{3}$. L. l. 55.

Eye $1\frac{2}{11}$. Fourth dorsal spine $2\frac{1}{2}$ i. h. Pectoral $4\frac{1}{4}$ in total.

Three specimens, up to 25.5 cm.

Nomen vulgare: *Roncador*.

295. **Pristipoma viridense** C. V.

Pristipoma viridense, Günther, Catalogue Fishes I, p. 302; Valenciennes, Iles Canaries, p. 26; Rochebrune, Faune Sénégal, l. c. p. 72, Capeverde.

296. **Pristipoma suillum** C. V.

Pristipoma suillum, Günther, Catalogue Fishes I, p. 302; Steind., Sitzb. Wien, LX, 1870, p. 682; Rochebrune, Faune Sénégal, l. c. p. 72; Osorio, Jorn. Lisboa (II) V, p. 196, Gulf of Guinea, Angola; Pellegrin, Ann. Monaco VI, 4, p. 46, Rufisque-Congo.

" *affine*, Fischer, Jahrb. Hamb. Wiss. Anstalten, 1885, p. 66, Eloby.

Collection-Vermeulen: Coast of Senegambia.

D. XII, 15; A. III, 9; L. l. 53; Length 36.5 cm.

N.B. Evidently Fisher had a young specimen of the species. His statement that *P. suillum* would not have a black opercular spot is incorrect.

297. *Pristipoma peroteti* C. V.

Pristipoma peroteti, Günther, Catalogue Fishes I, p. 302; Steind., Sitzb. Wien, LX, 1870, p. 678, Senegal; Rochebrune, Faune Sénégal, l. c. p. 73; Osorio, Jorn. Lisboa (II) V, p. 196, Gulf of Guinea, Angola; Pellegrin, Ann. Monaco VI, 4, p. 46, Dakar, Rufisque.

298. *Pristipoma macrophthalmum* Blkr.

Pristipoma macrophthalmum, Bleeker, Poissons Guinée, l. c. p. 62; Steind., Sitzb. Wien, LX, 1870, p. 684, Senegal; Rochebrune, Faune Sénégal, l. c. p. 72; Osorio, Jorn. Lisboa (II) III, p. 128, Angola; Ehrenbaum, Fischerbote VI, 1914, p. 257, Cameroon.

Larimus auritus, (C. V.), Günther, Catalogue Fishes I, p. 266.

Collection-Vermeulen: Coast Senegal.

D. XII, 13; A. III, 8—9; L. l. 49.

Eye $3\frac{2}{5}$ i. h. Third dorsal spine $1\frac{3}{5}$ (!). Tail forked, the middle rays being contained 2-times in the longest ones. Length 163—185 mm.

Nomen vulgare: *Antun*.

299. *Haemulon macrophthalmum* Osorio.

Haemulon macrophthalmum, Osorio, Jorn. Lisboa (II) III, p. 174, St. Thomé.

300. *Diagramma mediterraneum* Guich.

Diagramma mediterraneum, Günther, Catalogue Fishes I, p. 321; Steind., Sitzb. Wien, C, 1891, p. 360, Canaries; Id., Denkschr. Wien, XLIV, p. 25, Senegal; Rochebrune, Faune Sénégal, l. c. p. 73; Pellegrin, Ann. Monaco VI, 4, p. 47, Cape Blanco, Angola.

Collection-Vermeulen: Cape Blanco.

D. XI, 20; A. III, 8; Scales: 108 vertical rows.

Head $4\frac{2}{5}$. Depth $3\frac{1}{5}$ in total. Eye 4-. Snout $2\frac{4}{5}$. Interorbital $3\frac{3}{4}$. Maxillary $3\frac{1}{2}$. Remarkable is the variation in the number of scales (Steind.: 85—105).

Nomen vulgare: *Burro*.

301. **Diagramma octolineatum** C. V.

Diagramma octolineatum, Günther, Catalogue Fishes I, p. 303; Steind. Sitzb. Wien LVI, p. 621, Teneriffa; Rochebrune, Faune Sénégal., l. c., p. 73; Osorio, Jorn. Lisboa (II) V, p. 195.

Collection-Vermeulen: Coast Senegal.

Two specimens, up to 34 cm.

Nomen vulgare: *Burro canario*.

302. **Diagramma cavifrons** C. V.

Pristipoma cavifrons, Günther, Catalogue Fishes I, p. 286.

Diagramma cavifrons, Osorio, Jorn. Lisboa (II) III, p. 175, St. Thomé.

Both sides of Atlantic.

303. **Diagramma aeneum** Peters.

Diagramma aeneum, Peters, Monatsber. Berlin, 1868, p. 454, Victoria.

304. **Diagramma macrolepis** Boul.

Diagramma macrolepis, Boulenger, Poissons Bassin Congo, p. 388; Pellegrin, Ann. Monaco VI, 4, p. 47, Grand-Bassam; Ehrenbaum, Fischerbote VI, 1914, p. 258, Cameroon.

Diagramma crassispinum, Steind., Notes Leyden Mus. XVI, 1895, Liberia.

305. **Diagrammella macrops** Pell.

Diagrammella macrops, Pellegrin, Ann. Monaco VI, 4, p. 48, Angola.

306. **Genyatremus latifrons** Troschel.

Genyatremus latifrons, Troschel, Arch. Nat. Gesch., 1866, I, p. 202, Capeverde.

307. **Genyatremus angustifrons** Troschel.

Genyatremus angustifrons, Troschel, Arch. Nat. Gesch. 1866, I, p. 203, Capeverde.

SPARIDAE.

308. *Dentex vulgaris* C. V.

Dentex vulgaris, Günther, Catalogue Fishes I, p. 366; Valenciennes, Iles Canaries, p. 36; Steind., Denkschr. Wien, XLV, p. 3, Gorea; Rochebrune, Faune Sénégal., l. c. p. 74; Pellegrin, Ann. Monaco VI, 4, p. 49, Dakar.
 " *gibbosus* after Steind. the adult of *D. vulgaris*.

309. *Dentex canariensis* Steind.

Dentex canariensis, Steind., Sitzb. Wien, LXXXIII, 1881, p. 393; Id., Denkschr. Wien, XLV, p. 3, Gorea.

Collection-Vermeulen: Gorrei (Rio d'Ouro).

D. XII, 10; A. III, 8—10; L. l. 60—63.

Eye larger than in *D. vulgaris*. Well distinguished by the Spaniards from *D. filusus*, from which it differs in the length of the dorsal spine.

Nomen vulgare: *Chacarona*.

310. *Dentex maroccanus* C. V.

Dentex maroccanus, Steind., Notes Leyden Mus. XVI, 13, Liberia; Pellegrin, Ann. Monaco VI, 4, p. 50, Ivory-coast.

311. *Dentex macrophthalmus* Bl.

Dentex macrophthalmus, Günther, Catalogue Fishes I, p. 370; Osorio, Jorn. Lisboa (II) II, p. 106, St. Thomé; Pellegrin, Ann. Monaco VI, 4, p. 50, Angola; Vinciguerra, op. cit. p. 306, Canaries (after Valenciennes, Iles Canaries, p. 37).

312. *Dentex filusus* Val.

Dentex filusus, Valenciennes, Iles Canaries, p. 37: Steind., Sitzb. Wien, LVII, 1868, p. 975, Teneriffa; Rochebrune, Faune Sénégal., l. c. p. 74; Vinciguerra, loc. cit. p. 306 (thinks it the juv. of *D. gibbosus* Raf.); Osorio, Jorn. Lisboa (II) V, p. 196, St. Thomé, Angola; Pellegrin, Ann. Monaco VI, 4, p. 50, Cape Blanco, Angola.

Collection-Vermeulen: Gorrei (Rio d'Ouro). Length 35—45 cm. L. l. 60—61.

Border of praeoperculum slightly scaled.

Nomen vulgare: *Sama*.

313. *Dentex cunninghami* Regan.

Dentex cunninghami, Regan, Ann. Mg. N. H. (7) XV, p. 325, Angola.

314. **Maena zebra** Brünn.

Maena zebra, Vinciguerra, Atti Soc. It. Sc. Nat. XXXIV, p. 306, Canaries.

315. **Smaris melanurus** C. V.

Smaris melanurus, Steind., Notes Leyden Mus. XVI, p. 11, Liberia; Id., Denkschr. Wien, XLIV, p. 26, Senegal; Rochebrune, Faune Sénégal, l. c. p. 75; Osorio, Jorn. Lisboa (II) V, p. 196, Capeverde, Gulf of Guinea, Angola; Pellegrin, Ann. Monaco VI, 4, p. 51, Angola.

316. **Smaris insidiator** C. V.

Smaris insidiator, Steind., Sitzb. Wien, LVI, 1867, p. 635, Teneriffa; Vinciguerra, Atti Soc. It. Sc. Nat. XXXIV, p. 307, Canaries.

317. **Cantharus lineatus** Mont.

Cantharus lineatus, Steind., Sitzb. Wien, LVI, 1867, p. 649, Teneriffa; Osorio, Jorn. Lisboa (II) V, p. 196, Capeverde, Angola; Pellegrin, Ann. Monaco VI, 4, p. 51.

= " *griseus, vulgaris, senegalensis, brama* C. V. (after Steindachner).

Collection-Vermeulen: Cape Blanco.

Our material doesnot allow to test the identity with *C. senegalensis* C. V.

Nomen vulgare: *Chopa*.

318. **Box boops** L.

Box vulgaris, Steind., Sitzb. Wien, LVI, 1867, p. 651, Teneriffa; Osorio, Jorn. Lisboa (II) V, p. 196, Gulf of Guinea, Angola.

" *canariensis*, Valenc., Iles Canaries, p. 36, pl. 10.

" *boops*, Pellegrin, Ann. Monaco VI, 4, p. 51, Levrierbay.

319. **Box salpa** L.

Box salpa, Günther, Catalogue Fishes, p. 420; Steind., Sitzb. Wien, LVI, 1867, p. 653, Teneriffa; Rochebrune, Faune Séné-

gamb., l. c. p. 79; Osorio, Jorn. Lisboa (II) V, p. 196, Capeverde, Angola; Pellegrin, Ann. Monaco VI, 4, p. 52, Cape Blanco, Angola.

Collection-Vermeulen: Cape Blanco.

D. XI, 16; A. III, 14.

Nomen vulgare: *Salema*.

320. *Box goreensis* C. V.

Box goreensis, Troschel, Arch. Nat. Gesch., 1866, I, p. 215, Capeverde.

321. *Oblata melanura* L.

Oblata melanura, Günther, Catalogue Fishes I, p. 422; Steind., Sitzb. Wien LVI, 1867, p. 653, Teneriffa; Osorio, Jorn. Lisboa, (II) V, p. 196, Angola.

322. *Girella stübeli* Troschel.

Girella stübeli, Troschel, Arch. Nat. Gesch., 1866, I, p. 217, Capeverde.

323. *Sargus vulgaris* Geoffr.

Sargus vulgaris, Günther, Catalogue Fishes I, p. 437; Steind., Sitzb. Wien, LVI, 1867, p. 642, Teneriffa; Id., Denkschr. Wien, XLIV, p. 28, Senegal; Rochebrune, Faune Sénégal, l. c. p. 78; Pellegrin, Ann. Monaco VI, 4, p. 52, Cape Blanco, Hannbay.

Collection-Vermeulen (?): Coast Senegal.

D. XI, 15; A. III, 14; L. I, 58.

Head 4^{+} . Depth $2\frac{5}{9}$ in total. Eye 4 in head, $1\frac{1}{4}$ in interorbital, $1\frac{4}{5}$ in snout with teeth. Snout $2\frac{1}{3}$. Incisivi: $\frac{6}{8}$. Second dorsal $2\frac{2}{7}$ i. h. (!).

Colour: Membrane of spinous dorsal has a dusky margin, but no evident black spots. Length 25.5 cm.

Nomen vulgare: *Seifia*.

324. *Sargus cervinus* Lowe.

Sargus cervinus, Günther, Catalogue Fishes I, p. 448; Rochebrune, Faune Sénégalamb., l. c. p. 78; Osorio, Jorn. Lisboa (II) V, p. 196, Angola; Pellegrin, Ann. Monaco VI, 4, p. 53, Cape Blanco.

= „ *fasciatus* C. V., after Steind., Sitzb. Wien, LVI, 1867, p. 645, Canaries.

Collection-Vermeulen: Gorrei (Rio d'Ouro).

D. XI, 11; A. III, 11; L. l. 58.

Depth $2\frac{5}{8}$ in total. Incisivi: $\frac{10}{8}$.

Nomen vulgare: *Sargo aurealo*.

325. *Sargus fasciatus* C. V.

Sargus fasciatus, Günther, Catalogue Fishes I, p. 448; Valenciennes, Iles Canaries, p. 29; Troschel, Arch. Nat. Gesch. 1866, I, p. 208, Capeverde; Osorio, Jorn. Lisboa (II) V, 196, id., (separated by this autor from *S. servinus*, contrary to Berthelot, Steindachner, Vinciguerra).

326. *Sargus annularis* L.

Sargus annularis, Günther, Catalogue Fishes I, p. 445; Rochebrune, Faune Sénégalamb., l. c. p. 78.

327. *Sargus rondeleti* C. V.

Sargus rondeleti, Günther, Catalogue Fishes I, p. 440; Steind., Sitzb. Wien, LVI, 1867, p. 644, Teneriffa; Osorio, Jorn. Lisboa (II) V, p. 196, Capeverde, Angola; Pellegrin, Ann. Monaco VI, 4, p. 52, Lévrierbay, Angola.

Diplodus sargus, Jordan & Gunn, Proc. Ac. Philad., 1898, p. 341, Canaries.

Sargus vetula, Günther, Catalogue Fishes I, p. 445; Vinciguerra, Atti Soc. It. Sc. Nat. XXXIV, p. 309, Canaries (after Valenciennes); identical with *S. rondeleti* after Steindachner.

Collection-Vermeulen: Cape Blanco.

D. XI—XII, 13—14; A. III, 13—14.

Colour: soft vertical fins with black margins.

Length up to 42 cM.

Habitat: both sides of Atlantic.

328. *Sargus bellottii* Steind.

Sargus bellottii, Steind., Denkschr. Wien, XLV, p. 6, Canaries;
Pellegrin, Ann. Monaco VI, 4, p. 52, Levrierbay.

Collection-Vermeulen: Cape Blanco, Cansadobay.

D. XI, 14; A. III, 14—15; L. l. 52—53.

Canini: $\frac{8-10}{8}$.

In the mouth a *Cymothoa brasiliensis* Sch. & M.

Length 11—18 cm.

Nomen vulgare: *Mugara*.

329. *Sargus puntazzo* L.

Charax puntazzo, Steind., Sitzb. Wien, LVI, 1867, p. 647,
Teneriffa.

Sargus puntazzo, Troschel, Arch. Naturgesch., 1866, I, p. 209,
Capeverde; Vinciguerra, Atti Soc. It. Sc. Nat. XXXIV, p. 310.

Collection-Vermeulen: Cape Blanco.

D. XI, 14; A. III, 12; L. l. 65.

Head $4\frac{1}{4}$. Depth $2\frac{4}{5}$ in total. Eye $4\frac{3}{4}$ in head (with teeth).
Interorbital 3—. Snout $2\frac{1}{4}$. Maxillary $3\frac{1}{3}$. Incisivi $\frac{8}{8}$. Fifth dorsal
spine $3\frac{2}{5}$, third anal spine $4\frac{2}{7}$ in head. Pectoral = upper caudal,
lobe = $4\frac{4}{5}$ in total. Ventral 2 in head.

330. *Lethrinus atlanticus* C. V.

Lethrinus atlanticus, Günther, Catalogue Fishes I, p. 460,
Steind., Denkschr. Wien, XLIV, p. 28, Senegal; Rochebrune,
Faune Sénégal, l. c., p. 79; Osorio, Jorn. Lisboa (II) V, p. 196,
Capeverde, Angola; Pellegrin, Ann. Monaco VI, 4, p. 53, Gabon.

331. *Pagrus vulgaris* C. V.

Pagrus vulgaris, Günther, Catalogue Fishes I, p. 466; Steind.,
Sitzb. Wien, LVI, 1867, p. 655, Teneriffa; Rochebrune, Faune
Sénégal, l. c., p. 79; Osorio, Jorn. Lisboa (II), V, p. 196,
Gulf of Guinea.

Collection-Vermeulen: Cape Blanco, Rio d'Ouro.

D. XII, 10; A. III, 8; L. l. 54—56.

Head $3\frac{3}{4}$. Depth $3\frac{1}{3}$ — $3\frac{1}{2}$ in total. Eye 3 i. h.

Length 16—17 cM.

Nomen vulgare: *Lauriana*.

Both sides of Atlantic.

332. *Pagrus orphus* Risso.

Pagrus orphus, Günther, Catalogue Fishes I, p. 467; Valenciennes, Iles Canaries, p. 32; Vinciguerra, Atti Soc. It. Sc. Nat. XXXIV, p. 310; united by Steindachner with *P. vulgaris*.

333. *Pagrus auriga* Val.

Pagrus auriga, Valenciennes, Iles Canaries, p. 34; Günther, Catalogue Fishes I, p. 471; Steind., Denkschr. Wien. XLV, p. 3, Canaries; Rochebrune, Faune Sénégal, l. c. p. 79; Pellegrin, Ann. Monaco VI, 4, p. 53, Cape Blanco and Guinea.

" *bertheloti*, Valenciennes, Iles Canaries, p. 33; Steindachner unites this species with *P. Ehrenbergii*; Vinciguerra with *P. coeruleostictus* C. V.

D. XI, 11; A. III, 8; L. l. 49—53.

a. Juv. Maxillary reaching anterior border of orbit, $3\frac{3}{5}$ in head. Anterior dorsal spine filamentous. Upper caudal lobe $4\frac{1}{2}$ in total. Length 15.5 cM.

b. Adult. Head 4, depth 3— $2\frac{3}{4}$ in total. Eye $4\frac{5}{6}$. Interorbital 3. Maxillary $2\frac{2}{7}$ in head (reaching anterior border of eye). "Canini" $\frac{4}{6}$, the two middle ones in lower jaw conspicuously smaller than the two outer pairs. Two rows of molars in both jaws. Scales 6—53—15; oblique rows on praeopercle. Third dorsal spine $6\frac{1}{3}$ in total, $1\frac{3}{5}$ — $1\frac{5}{6}$ in head. Third anal spine equally long but not so strong as the second one. Upper caudal lobe = head. Pectoral $3\frac{1}{5}$ in total. Ventral $4\frac{3}{5}$ in total.

Colour: A distinct black crossbar in the humeral region. Lower side of head (save the chin) dark. Behind pectoral base a dark area, not in the axil. Dorsal pale, the base darker; anal dark, specially distally, like the ventral.

Length of the two specimens 47 cM.

N.B. The dorsal rays which are much prolonged in young do

not increase much in absolute length, so that in the adult the proportions are very different. Most authors (save Pellegrin) seem to have had small specimens.

Nomen vulgare: *Burta* (adult); *Catalinetta* (juv.).

334. ***Pagrus ehrenbergi* C. V.**

Pagrus ehrenbergi, Günther, Catalogue Fishes I, p. 471; Rochebrune, Faune Sénégal., l. c. p. 79; Osorio, Jorn. Lisboa (II) V, p. 196, Gulf of Guinea, Angola; Pellegrin, Ann. Monaco VI, 4, p. 53, Angola.

Collection-Vermeulen: Cape Blanco 2 specimens 37—47 cM.

D. XII, 11; A. III, 9. L. l. 52—53.

2nd dorsal spine longest, equal to head, $4\frac{1}{3}$ in total canini $\frac{4}{4}$ (2 smaller incisors in lower jaw between). Depth 3 in total.

Nomen vulgare: *Zapata*.

335. ***Pagrus coeruleostictus* C. V.**

Chrysophrys coeruleostictus, Günther, Catalogue Fishes I, p. 485; Rochebrune, Faune Sénégal., l. c. p. 80; Valenciennes, Iles Canaries, p. 31; Osorio, Jorn. Lisboa (II) V, p. 196, Angola.

Pagrus coeruleostictus, Steind., Sitzb. Wien, LVII, 1868, p. 973, Teneriffa.

Collection-Vermeulen: Cape Blanco. Length 52 cM.

D. XII, $10\frac{1}{2}$; A. III, $8\frac{1}{2}$; L. l. 51. „Canini” $\frac{4}{6}$.

More slender than *P. auriga*, the depth being contained 3⁺ in the total length. Third dorsal spine $2\frac{1}{3}$ i. h.

Nomen vulgare: *Roquera*.

336. ***Pagrus auratus* L.**

Chrysophrys crassirostris, Cuvier & Valenciennes, op. cit., p. 98, pl. 146 (adult).

” *aurata*, Günther, Catalogue Fishes I, p. 484; Pellegrin, Bull. Soc. Zool. XXXVII, 1912, p. 260, Agadir.

Collection-Vermeulen: Cape Blanco.

D. XII, 12; A. III, 11; P. 16; L. l. 77.

Head 4, depth $3\frac{1}{7}$ — $3\frac{1}{3}$ in total. Eye 4. Interorbital 3. Snout 2⁺ i. h., its profile gibbous before eye. Minimum depth of suborbital $1\frac{3}{5}$ in its length. Maxillary reaching anterior border of pupil, $2\frac{1}{3}$ i. h. Teeth: canini small $\frac{6}{6}$; 5 rows of molars in upper, 3 in lower

jaw. Scales: 8—77—23 (to ventral line), $7\frac{1}{2}$ rows on praeopercle. Second dorsal spine $3\frac{2}{7}$, third spine $2\frac{4}{7}$ in head. Third anal spine $3\frac{1}{2}$. Pectoral $3\frac{2}{3}$ in total, reaching third anal spine. Ventral 7. Upper caudal lobe much longer than lower one, nearly 4 in length (length reckoned from base of outer ray).

Colour: frontal markings conspicuous; snout dark; humeral blotch strong, axillary spot very small at inner, superior side of pectoral base. Dorsal and caudal with a narrow black margin, the lower half of soft dorsal darker. Rest of fins pale.

Length 30 cm.

Nomen vulgare: *Zapata morisca*.

337. *Pagrus gibbiceps* C. V.

- ♂ *Chrysophrys gibbiceps*, Günther, Catalogue Fishes I, p. 486;
Rochebrune, Faune Sénégal., l. c., p. 81.
♀ " *cristiceps*, Günther, Catalogue Fishes I, p. 486.

? Collection-Vermeulen: Cape Blanco.

D. XII, 11; A. III, 10; L. l. about 60.

Head 4. Depth $4\frac{1}{2}$. A distinct crest on nape.

Length 13.3 cm.; one specimen in poor condition.

Nomen vulgare: *Garapello*.

338. *Pagellus erythrinus* L.

- Pagellus erythrinus*, Günther, Catalogue Fishes I, p. 473;
Steind., Denkschr. Wien, XLIV, p. 30, Senegal;
Rochebrune, Faune Sénégal., l. c., p. 80; Pellegrin,
Ann. Monaco VI, 4, p. 54, Cape Blanco-Angola.
" *canariensis*, Valenciennes, Iles Canaries, p. 35 (con-
sidered as a separate species by Vinciguerra, Atti Soc. Ital. Sc.
Nat. XXXIV, p. 311).

339. *Pagellus centrodontus* C. V.

- Pagellus centrodontus*, Günther, Catalogue Fishes I, p. 476;
Steind., Sitzb. Wien, LVI, 1867, p. 663, Teneriffa.

340. *Pagellus acarne* C. V.

- Pagellus acarne*, Günther, Catalogue Fishes I, p. 480; Steind.,
Sitzb. Wien, LVI, 1867, p. 662, Teneriffa.

341. *Pagellus bogaraveo* Bränn.

Pagellus bogaraveo, Günther, Catalogue Fishes, p. 480; Vinci-guerra, Atti, Soc. Ital. Sc. Nat. XXXIV, p. 311, Canaries (United by Steind. with *C. acarne*).

342. *Pagellus mormyrus* L.

Pagellus mormyrus, Günther, Catalogue Fishes I, p. 481; Valenciennes, Iles Canaries, p. 35; Rochebrune, Faune Sénégal., l. c., p. 80; Osorio, Jorn. Lisboa (II) V, p. 196, Capeverde, Angola; Pellegrin, Ann. Monaco VI, 4, p. 54, Cape Blanco-Angola.

" *goreensis*, Cuvier & Valenciennes, Hist. Nat. Poiss. VI, p. 203; (regarded as a separate species by Troschel, Arch. Naturgesch., 1866, I, p. 211 (Capeverde).

Said to occur in Brazil (Jordan & Fesler). Report U. S. Fish Comm. for 1889—1891 p. 517.

343. *Pagellus bellottii* Steindachn.

Pagellus bellottii, Steind., Denkschr. Wien, XLV, p. 5, pl. III, Canaries; Osorio, Jorn. Lisboa (II) V, p. 196, Gulf of Guinea.

344. *Pagellus lippei* Steind.

Pagellus lippei, Steind., Sitzb. Wien, CIII, 1894, p. 443, Fernando Po.

MULLIDAE.

345. *Mullus surmuletus* L.

Mullus surmuletus, Osorio, Jorn. Lisboa (II) V, p. 196, Gulf of Guinea; Pellegrin, Ann. Monaco VI, 4, p. 54, Lévrierbay.

346. *Mullus barbatus* L.

Mullus barbatus, Steind., Sitzb. Wien, LVI, 1867, p. 636, Teneriffa; Rochebrune, Faune Sénégal., l. c., p. 75; Vinci-guerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 307, Canaries.

347. *Upeneus prayensis* C. V.

Pseudupeneus prayensis, Bleeker, Nat. Verh. Holl. Maatsch. Wet Haarl. (II) XVIII, 1863, p. 57, Guinea.

Upeneus prayensis, Troschel, Arch. Naturgesch. 1866, I, p. 216, Capeverde; Rochebrune, Faune Sénégal., l. c., p. 75; Osorio, Jorn. Lisboa (II) V, p. 196, Capeverde, Gulf of Guinea; Pellegrin, Ann. Monaco VI, 4, p. 54, Lévrierbay-Angola.

Collection-Vermeulen: Senegal-coast.

One specimen has two small teeth as representatives of the three strong recurved teeth of the first row. This (sexual?) character has probably given rise to the very much diverging data about the dentition by Günther and Bleeker.

Length 22 cm.

SCORPIDIDAE.

348. *Psettus sebae* C. V.

Psettus sebae, Steind., Notes Leyden Mus. XVI, p. 19, Liberia; Rochebrune, Faune Sénégal., l. c., p. 106; Osorio, Jorn. Lisboa (II) V, p. 198, Dahomé; Pietschmann, Jahrb. Nassauer Ver. Naturk., LXVI, 1913, p. 181, Cameroon; Pellegrin, Ann. Monaco VI, 4, p. 55, Senegal-Congo; Ehrenbaum, Fischerbote VI, 1914, p. 337, Cameroon.

CAPROIDAE.

349. *Capros aper* L.

Capros aper, Günther, Catalogue Fishes II, p. 495; Steind., Sitzb. Wien, LVI, 1867, p. 395, Teneriffa.

350. *Antigonia capros* Lowe.

Antigonia capros, Lowe, Pr. Z. S. 1843, p. 86, Madeira; Gnthr. Cat. Fishes II, p. 497.

Warm Atlantic; no doubt occurring at the Canaries, though not yet found.

CHAETODONTIDAE.

351. *Chaetodon striatus* L.

Chaetodon striatus, Osorio, Jorn. Lisboa (II) II, p. 109, St. Thomé. Both sides of Atlantic.

352. *Chaetodon hoeferi* Steind.

Chaetodon hoeferi, Steind., Denkschr. Wien, XLIV, p. 30, pl. V; Osorio, Jorn. Lisboa (II) V, p. 196; Pellegrin, Ann. Monaco, VI, 4, p. 55, Lévrierbay.

" *luciae*, Rochebrune, Faune Sénégal., l. c. p. 83, pl. IV, Capeverde.

Collection-Vermeulen: Cape Blanco.

D. X, 23; A. III, 18.

Colour: the young have the usual ocellus on the posterior part of soft dorsal, still very evident in a specimen of 4 cm. The narrow crossbar on caudal peduncle and adjacent fins fading with age. Length 4—15 cm.

353. *Ephippus goreensis* C. V.

Ephippus goreensis, Günther, Catalogue Fishes II, p. 61; Steind., Denkschr. Wien, XLV, p. 10; Gorea; Id., Notes Leyden Mus. XVI, p. 14, Liberia; Rochebrune, Faune Sénégal., l. c. p. 85; Pellegrin, Ann. Monaco VI, 4, p. 55, Dakar, Libréville.

Collection-Vermeulen: Coast Senegal.

D. I, IX, 20½; A. III, 16½; L. l. about 44.

Depth 2- in total. First dorsal spine short, horizontal. Second and third spine short; fourth to seventh filamentous, the 5th and 6th being longest, 4 in total; 8th to 10th very short. Outline of anal distinctly concave. First soft ventral ray filamentous.

Length 25 cm.

Most authors give: „3 prolonged spines”, and before and behind them one short spine less than our number, except Pellegrin; (his specimen had probably: D. I, IX, 19; A. III, 15, if written in the same way as ours).

354. *Ephippus faber* Brouss.

Ephippus faber, Günther, Catalogue Fishes II, p. 61.

" *gigas*, Osorio, Jorn. Lisboa (II) II, 1890, p. 110, St Thomé.

D. I, IX, 21; A. III, 16; L. l. 46.

Depth 1.65 in total. Profile of snout concave. First dorsal spine horizontal, hidden in the flesh. Membrane of spinous dorsal high, the 2nd and 3rd spines short, the 4th much stronger, but shorter than in *E. goreensis*, 1⅓ in head, 5⅔ in total, not flexible; the 5th much smaller, 2⅔ i. h.; spines thence gradually decreasing up

to the 9th, all strong. Soft dorsal *not prolonged*, 2nd and 3rd anal spines formed by *concreting of two parts*, one behind the other. Soft anal not prolonged, not concave. First ventral ray filamentous. No falcation of vertical fins whatever.

Colour: crossbars on cheek and humeral region.

Length 33 cM.

Both sides of Atlantic.

355. ***Drepane punctata* L. var. *africana* Osorio.**

Drepane punctata, Steind., Notes Leyden Mus. XVI, p. 15, Liberia.

" *punctata* var. C. Günther, Catalogue Fishes II, p. 63.

" *punctata africana*, Osorio, Jorn. Lisboa (II) II, p. 207, Rolas, Angola.

" *punctata octofasciata*, Pellegrin, Ann. Monaco VI, 4, p. 57, Libreville-Congo; Ehrenbaum, Fischerbote VI, 1914, p. 294, Cameroon fine figure.

ACANTHURIDAE.

356. ***Acanthurus monroviae* Steind.**

Acanthurus monroviae, Steind., Sitzb. Wien, LXXIV, 1876, p. 208.

Collection-Vermeulen: Coast Senegal.

Three fine adult specimens.

357. ***Acanthurus chirurgus* Bl.**

Acanthurus chirurgus, Günther, Catalogue Fishes III, p. 329; Rochebrune, Faune Sénégal., l. c. p. 117; Osorio, Jorn. Lisboa (II) V, p. 198, Capeverde, St. Thomé; Pellegrin, Ann. Monaco VI, 4, p. 58.

" *phlebotomus*, Troschel, Arch. Naturgesch. 1866, I, p. 227, Capeverde.

Both sides of Atlantic.

CICHLIDAE.

358. ***Pelmatochromis jentinki* Steind.**

Pelmatochromis jentinki, Steind., Notes Leyden Mus. XVI, p. 43, Liberia, (brackishw.); Bouleng., Proc. Zool. Soc. 1898, p. 148; Pellegrin, Ann. Monaco VI, 4, p. 59, Ivory-coast.

359. **Hemichromis fasciatus** Peters.

Hemichromis fasciatus, Peters, Monatsber. Berlin, 1857, p. 403; Bleeker, Poissons Guinée, l. c. p. 38; Steind., Sitzb. Wien, LX, 1870, p. 970, Senegal; Pellegrin, Ann. Monaco VI, 4, p. 59 (brackish water).

360. **Hemichromis bimaculatus** Gilb.

Hemichromis bimaculatus, Sauvage, Bull. S. Zoöl. Franc. 1882, p. 316; Steind., Sitzb. Wien, LX, 1870, p. 972; Osorio, Jorn. Lisboa, (II) V, p. 199, Bissau; Pellegrin, Ann. Monaco VI, 4, p. 59, Guinea.

361. **Chromis guineensis** Blkr.

Haligenes guineensis, Bleeker, Poissons Guinée, l. c. p. 41.

362. **Chromis mossambicus** Peters.

Chromis mossambicus, Günther, Catalogue Fishes IV, p. 268; Steind., Sitzb. Wien, LX, 1870, p. 967.

363. **Chromis niloticus** Hasselqu.

Chromis niloticus, Steind., Sitzb. Wien, LX, 1870, p. 964, Senegal; Id., Denkschr. Wien, XLIV, p. 47, Senegal; Rochebrune, Faune Sénéamb., l. c. p. 129.

364. **Chromis macrocephalus** Blkr.

Melanogenes macrocephalus, Bleeker, Poissons Guinée, l. c. p. 36.

Chromis macrocephalus, Osorio, Jorn. Lisboa (II) V, p. 199, Angola; Günther, Catalogue Fishes IV, p. 273.

Tilapia macrocephala, Pellegrin, Ann. Monaco VI, 4, p. 62, Ivorycoast.

365. **Chromis acuticeps** Steind.

Chromis acuticeps, Steind., Verh. Zoöl. Bot. Ges. Wien, XVI, 1866, p. 764, pl. 15, Angola.

366. **Chromis heudeloti** A. Dum.

Melanogenes microcephalus, Bleeker, Poissons Guinée, l. c. p. 37.

Chromis heudeloti, Günther, Catalogue Fishes IV, p. 270.

Tilapia heudeloti, A. Duméril, Arch. Mus. X, p. 254, Pellegrin, Ann. Monaco VI, 4, p. 61, brackish water.

367. **Chromis meeki** Pell.

Tilapia meeki, Pellegrin, Ann. Monaco VI, 4, p. 63, Ivorycoast.

368. **Chromis melanopleura** A. Dum.

Tilapia melanopleura, A. Duméril, Arch. Mus. X, p. 252, pl. XXII; Pellegrin, Ann. Monaco VI, 4, p. 62, Dakar-Ivorycoast.

369. **Sarotherodon melanotheron** Rüpp.

Sarotherodon melanotheron, Günther, Catalogue Fishes IV, p. 273, Goldcoast.

POMACENTRIDAE.

370. **Pomacentrus leucostictus** M. Tr.

Pomacentrus leucostictus, Günther, Catalogue Fishes IV, p. 31; Osorio, Jorn. Lisboa (II) II, p. 124, St. Thomé.

Both sides of Atlantic.

371. **Pomacentrus hamyi** Rochebrune.

Pomacentrus hamyi, Rochebrune, Faune Sénégalamb., l. c., p. 30, pl. III.

372. **Onychognathus cantus** Trosch.

Onychognathus cantus, Troschel, Arch. Naturgesch., 1866, I, p. 231, Capeverde.

373. **Abudefduf saxatilis** L.

Glyphidodon saxatilis, Troschel, Arch. Naturgesch., 1866, I, p. 231, Capeverde; Steind., Denkschr. Wien, XLV, p. 11, Gorea; Osorio, Jorn. Lisboa (II) V, p. 198, Gulf of Guinea.

Both sides of Atlantic.

374. **Abudefduf luridus** C. V.

Glyphidodon luridus, Günther, Catalogue Fishes IV, p. 56; Rochebrune, Faune Sénégal., l. c. p. 124; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 324, Canaries; Osorio, Jorn. Lisboa (II) V, p. 198, Capeverde.

375. **Abudefduf chrysurus** C. V.

Glyphidodon chrysurus, Günther, Catalogue Fishes IV, p. 57; Osorio, Jorn. Lisboa (II) II, p. 125, St. Thomé.
Both sides of Atlantic.

376. **Abudefduf hoefleri** Steind.

Glyphidodon hoefleri, Steind., Denkschr. Wien, XLIV, p. 43, Senegal; Rochebrune, Faune Sénégal., l. c. p. 124; Pellegrin, Ann. Monaco VI, 4, p. 63, Dahomey.

377. **Abudefduf hermani** Steind.

Glyphidodon hermani, Steind., Sitzb. Wien, XCVI, I, 1887, p. 59, Capeverde.

378. **Heliastes chromis** L.

Heliastes chromis, Steind., Sitzb. Wien, LVII, 1868, p. 688, Teneriffa; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 325, Canaries.

" *limbatus*, Cuvier & Valenc., op. cit. IX, p. 511; Valenc., Iles Canaries (27) pl. VII.

? " *marginatus*, Osorio, Jorn. Lisboa (II) II, p. 139, St. Thomé.

379. **Heliastes bicolor** Roch.

Heliastes bicolor, Rochebrune, Faune Sénégal., l. c., p. 125, pl. III.

LABRIDAE.380. **Labrus reticulatus** L.

Labrus reticulatus, Valenc., Iles Canaries, p. 62; Günther, Catalogue Fishes, IV, p. 73.

381. **Labrus mixtus** L.

Labrus mixtus, Günther, Catalogue Fishes IV, p. 74; Rochebrune, Faune Sénégal., l. c. p. 126.

" *jagonensis*, (Bowd.), Osorio, Jorn. Lisboa (II) V, p. 198, Capeverde.

382. **Crenilabrus bailloni** C. V.

Crenilabrus bailloni, Günther, Catalogue Fishes IV, p. 84; Pellegrin, Ann. Monaco VI, 4, p. 64.

Collection-Vermeulen: Cansadobay.

D. XIV, 10; A. III, 10; L. l. 34—35.

Colour: a distinct back point always terminating the lateral line.

Length up to 7 cm.

383. **Acantholabrus palloni** Risso.

Acantholabrus palloni, Günther, Catalogue Fishes IV, p. 91; Steind., Sitzb. Wien, LVII, 1868, p. 699, Teneriffa.

384. **Centrolabrus trutta** Lowe.

Centrolabrus viridis, *romeritus*, *romerus*, Valenciennes, Iles Canaries, p. 64 (pl. 17).

" *trutta*, Steind., Sitzb. Wien, LVII, 1868, p. 1001, Teneriffa; Rochebrune, Faune Sénégal., l. c., p. 126; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 325, Canaries.

385. **Cossyphus tredecimspinosus** Gnthr.

Cossyphus tredecimspinosus, Günther, Catalogue Fishes IV, p. 107; Steind., Denkschr. Wien, XLIV, p. 44;

Osorio, Jorn. Lisboa (II) V, p. 198, St. Thomé.

" *jagonensis*, Troschel, Arch. Naturgesch., 1868, I, p. 229, Capeverde.

Collection-Vermeulen: Coast Senegal.

D. XII, 10; A. III, 12; P. 17; L. l. 33.

Eye $1\frac{1}{2}^+$ in interorbital, 6 in head (with flap and teeth). Interorbital $3\frac{3}{4}$ in head (id.). Eight series of scales on cheek. Ventral spine $2\frac{3}{5}$ in head.

Length 30 cm.

386. *Cossyphus scrofa* C. V.

Cossyphus scrofa, Günther, Catalogue Fishes IV, p. 111; Rochebrune, Faune Sénégalamb., l. c. p. 126, Capeverde.

Trochocopus scrofa, Steind., Sitzb. Wien, LVII, 1868, p. 999, Teneriffa.

387. *Julis pavo* Hasselqu.

Julis pavo, Günther, Catalogue Fishes IV, p. 179; Steind., Denkschr. Wien, XLIV, p. 44, Senegal; Id. Sitzb. Wien, LVII, 1868, p. 700, Teneriffa; Osorio, Jorn. Lisboa (II) V, p. 198, Gulf of Guinea, Angola.

Thalassoma unimaculatum, Jordan & Gunn, Proc. Ac. Philad., 1898, p. 343.

388. *Julis newtoni* Osorio.

Julis newtoni, Osorio, Jorn. Lisboa (II) II, p. 127, St. Thomé.

389. *Coris atlantica* Gnthr.

Coris atlantica, Günther, Catalogue Fishes IV, p. 197; Rochebrune, Faune Sénégalamb., l. c. p. 127; Osorio, Jorn. Lisboa (II) II, p. 128, St. Thomé.

390. *Coris julis* L.

Coris julis, Günther, Catalogue Fishes IV, p. 195.

Julis vulgaris, speciosa, Valenciennes, Iles Canaries, p. 65 (male).

" *julis*, Jordan, Review Labroid Fishes, Rep. U. S. Fish Comm. for 1887, p. 636.

Coris giofredi, Günther, Catalogue Fishes IV, p. 197; Vinciguerra, Atti Soc. Ital. Sc. Nat., XXXIII, p. 326, Canaries (female).

391. *Coris guineënsis* Blkr.

Coris guineënsis, Bleeker, Poissons Guinée, l. c. p. 31; Steind., Notes Mus. XVI, p. 37, Liberia; Osorio, Jorn. Lisboa (II) V, p. 198, Anno Bom.

392. *Coris hupferi* Fischer.

Coris hupferi, Fischer, Jahrb. Hamb. Wiss. Anst. 1885, p. 73 (Liberia).

393. **Xyrichtys cultratus** C. V.

Novacula cultrata, Günther, Catalogue Fishes IV, p. 169; Osorio, Jorn. Lisboa (II) V, Capeverde, Gulf of Guinea; Pellegrin, Ann. Monaco VI, 4, p. 64, Senegal.

" *lineolata*, Bleeker, Poissons Guinée, l. c. p. 193.
Identified with an American species.

SCARIDAE.394. **Sparisoma cretense** L.

Scarus cretensis, Steind., Denkschr. Wien, XLV, p. 45, Senegal; Id. Sitzb. Wien, LVII, 1868, p. 702, Teneriffa; Rochebrune, Faune Séné gamb., l. c. p. 127; Osorio, Jorn. Lisboa (II) V, p. 199, Capeverde, Gulf of Guinea; Pellegrin, Ann. Monaco VI, 4, p. 64, Dakar-Gabon.
" *rubiginosus*, Valenciennes, Iles Canaries, p. 68, pl. 17.

395. **Sparisoma radians** C. V.

Scarus radians, Osorio, Jorn. Lisboa (II) V, p. 199, Anno Bom.
Both sides of Atlantic.

396. **Sparisoma flavesceus** Bl. Schn.

Scarus squalidus, Osorio, Jorn. Lisboa (II) V, p. 199, Capeverde.
" *flavesceus*, Jordan & Evermann, Fishes of N. & M. Am. p. 1639.
Both sides of Atlantic.

397. **Pseudoscarus hoeferi** Steind.

Pseudoscarus hoeferi, Steind., Denkschr. Wien, XLIV, p. 46, Senegal; Osorio, Jorn. Lisboa (II) V, p. 199, St. Thomé.

398. **Pseudoscarus guacamaia** Cuv.

Pseudoscarus guacamaia, Günther, Catalogue Fishes IV, p. 233; Pellegrin, Ann. Monaco VI, 4 p., 65, Konakry.
Both sides of Atlantic.

CARANGIDAE.

399. *Trachurus trachurus* L.

Caranx trachurus, Steind., Sitzb. Wien, LVII, 1868, p. 384, Teneriffa.

Trachurus trachurus, Günther, Catalogue Fishes II, p. 419; Osorio, Jorn. Lisboa (II) V, p. 197, St. Thomé, Angola.

Both sides of Atlantic.

Collection-Vermeulen: Cape Blanco.

400. *Trachurus mediterraneus* Steind.

Caranx trachurus, var. B. sive *mediterranea*, Steind., Sitzb. Wien, LXII, 1868, p. 383, Teneriffa.

401. *Trachurus cuvieri* Lowe.

Caranx cuvieri, Steind., Sitzb. Wien, LVII, 1868, p. 384, Teneriffa.

Trachurus picturatus, Jordan & Evermann, Fishes of N. & M. Am. I, p. 909.

Both sides of Atlantic.

402. *Caranx (Decapterus) punctatus* Agass.

Caranx punctatus, Cuvier & Valenciennes, op. cit. IX, p. 38; Günther, Catalogue Fishes II, p. 426; Troschel, Arch. Naturgesch., 1866, I, p. 224, Capeverde; Osorio, Jorn. Lisboa (II) V, p. 197, Anno Bom.

Both sides of Atlantic.

403. *(Decapterus) Caranx jacobaeus* C. V.

? *Caranx sanctaehelenae*, Cuvier & Valenciennes, op. cit. IX, p. 37; Cunningham, P. Z. S. 1910, p. 102, St. Helena.

Caranx jacobaeus, Cuvier & Valenciennes, id. p. 42 (Capeverde); Günther, Catalogue Fishes II, p. 427; Rochebrune, Faune Sénégal., l. c., p. 98; Osorio, Jorn. Lisboa (II) V, p. 197, Capeverde.

?? *Caranx maruadsi*, Temminck & Schlegel.

Collection-Vermeulen: West Africa, no locality.

D. VIII, I, 32; A. II, I, 29 I; 28 lat. scutes.

Head $4\frac{2}{5}$, depth 5- in total. Eye $1\frac{1}{3}$ in snout. Maxillary reaching past anterior border of eye. Teeth well developed on jaws, vomer, palatine and tongue. Adipose eyelid evident. Upper caudal lobe $4\frac{3}{4}$. Pectoral $4\frac{1}{4}$.

Colour: soft dorsal with a black blotch, the extreme tip white. Length 39 cm.

Both sides of Atlantic.

404. **Caranx (Decapterus) rhonchus** Geoffr.

Caranx rhonchus, Steind., Denkschr. Wien, XLIV, p. 34, Senegal; Rochebrune, Faune Sénéamb., l.c. p. 98; Osorio, Jorn. Lisboa (II) III, p. 132; Pellegrin, Ann. Monaco VI, 4, p. 65, Lévrierbay-Angola.

Collection-Vermeulen: Cape Blanco.

D. VIII, 1, 30 I; A. II, 1, 25 I; L. l. 26.

Nomen vulgare: *Chicharro*.

405. **Caranx crumenophthalmus** Bl.

Caranx crumenophthalmus, Günther, Catalogue Fishes II, p. 429; Rochebrune, Faune Sénéamb., l.c. p. 98; Osorio, Jorn. Lisboa (II) V, p. 197, Capeverde, Gulf of Guinea; Pellegrin, Ann. Monaco VI, 4, p. 65, Angola.

Both sides of Atlantic.

406. **Caranx senegallus** C. V.

Caranx senegallus, Günther, Catalogue Fishes II, p. 435; Steind., Sitzb. Wien, LX, 1870, p. 704, Senegal; Rochebrune, Faune Sénéamb., l.c. p. 98; Steind., Denkschr. Wien, XLV, p. 9, Gorea, Gabon.

407. **Caranx dentex** Bl. Schn.

Caranx dentex, Günther, Catalogue Fishes II, p. 441; Rochebrune, Faune Sénéamb., l.c. p. 99; Pellegrin, Ann. Monaco VI, 4, p. 65, Senegal.

" *analis*, Valenciennes, Iles Canaries, p. 57, pl. 12.

Both sides of Atlantic.

408. *Caranx marginatus* (Schl.) Blkr.

Hemicaranx marginatus, Bleeker, Poissons Guinée, l.c. p. 81 (nec Gill.); Ehrenbaum, Fischerbote VI, 1914, p. 344, Cameroon.

409. *Caranx bicolor* Gnthr.

Caranx bicolor, Günther, Catalogue Fishes II, p. 442; Pellegrin, Ann. Monaco VI, 4, p. 66, Congo.

410. *Caranx chrysos* Mitch.

Caranx chrysos, Günther, Catalogue Fishes II, p. 445; Steind., Notes Leyden Mus. XVI, p. 20, Liberia.
Both sides of Atlantic.

411. *Caranx carangus* Bl.

Caranx carangus, Günther, Catalogue Fishes II, p. 448; Rochebrune, Faune Sénégalamb., l.c. p. 99; Osorio, Jorn. Lisboa (II) V, p. 197, Gulf of Guinea; Pellegrin, Ann. Monaco VI, 4, p. 66, Dakar; Ehrenbaum, Fischerbote VI, 1914, p. 345, Cameroon.
Both sides of Atlantic.

412. *Caranx hippos* L.

Caranx hippos, Günther, Catalogue Fishes II, p. 449; Pellegrin, Ann. Monaco VI, 4, p. 66, Ivorycoast, Libreville.
Both coasts of Atlantic.

413. *Caranx macrops* Steind.

Caranx macrops, Steind., Sitzb. Wien, LV, 1867, p. 519, Monrovia.

414. *Caranx alexandrinus* C. V.

Caranx alexandrinus, Günther, Catalogue Fishes II, p. 455; Rochebrune, Faune Sénégalamb., l.c. p. 99; Osorio, Jorn. Lisboa (II) V, p. 197, Gulf of Guinea, Angola.
Blepharis alexandrinus, Pellegrin, Ann. Monaco VI, 4, p. 66, Dakar, Konakry.
Collection-Vermeulen: Baie de l'Ouest, 52 mm.

415. *Caranx sutor* C. V.

Caranx sutor, Günther, Catalogue Fishes II, p. 454.

Blepharis sutor, Osório, Jorn. Lisboa (II) V, p. 197, Capeverde.
Both sides of Atlantic.

416. *Caranx africanus* Steind.

Caranx africanus, Steind., Sitzb. Wien, LXXXVIII, 1884,
p. 1108, pl. VII; Pellegrin, Ann. Monaco VI, 4, p. 66, Ivorycoast,
Konakry.

417. *Selene vomer* L.

Argyreosus vomer, Günther, Catalogue Fishes II, p. 458;
Osorio, Jorn. Lisboa (II) V, p. 197, Fernando Po.
Both sides of Atlantic.

418. *Selene goreënsis* C. V.

Hypnis goreënsis, Cuvier & Valenciennes, op. cit. IX, p. 195,
pl. 257.

Caranx goreënsis, Günther, Catalogue Fishes II, p. 457;
Rochebrune, Faune Sénégalamb., l. c. p. 99; Steind., Denkschr.
Wien, XLIV, p. 35, Senegal.

Selene goreënsis, Steind., Denkschr. Wien, XLV, p. 9, Gorea.

Collection-Vermeulen: Cape Blanco.

D. I, 20; A. I, 19; L. I, 11.

Colour: No black blotch on pectoral base as in the specimen
of Cuvier & Valenciennes and Steindachner.

Nomen vulgare: *Palometon*.

419. *Selene setipinnis* Mitch.

Argyreosus setipinnis, Günther, Catalogue Fishes II, p. 459;
Rochebrune, Faune Sénégalamb., l. c. p. 100; Osorio, Jorn. Lisboa
(II) V, p. 197, Capeverde, Angola; Pellegrin, Ann. Monaco VI,
4, p. 67, Lévrierbay, Gabon; Regan, Ann. Mag. Nat. Hist. (8)
XV, p. 126.

Vomer brownii, Troschel, Arch. Nat., 1866, I, p. 225, Capeverde.

Argyreosus gabonensis, Steind., Sitzb. Wien, LX, 1869, p. 707.

Selene setipinnis, Steind., Denkschr. Wien, XLV, p. 9, Cape-
verde; Ehrenbaum, Fischerbote 1914, VI, 1914, p. 342, Cameroon.

Collection-Vermeulen: Faux Cap.

D. VIII, I, 23—24; A. II, I, 18—20.

Height 2 in total in juv., 2 in length to end of middle caudal rays in adolescent.

N. B. All the variations, described as *V. senegalensis*, *goreënsis*, *gabonensis* Guich., *dorsalis* Gill, are due to differences in age and sex.

Both sides of Atlantic.

420. *Micropteryx chrysurus* L.

Micropteryx chrysurus, Günther, Catalogue Fishes II, p. 460; Rochebrune, Faune Sénégal., l. c. p. 100; Osorio, Jorn. Lisboa (II) V, p. 197, St. Thomé-Angola; Pellegrin, Ann. Monaco VI, 4, p. 67, Lévrierbay, Gabon; Ehrenbaum, Fischerbote VI, 1914, p. 343, Cameroon.

Seriola cosmopolita, Duméril, Arch. Mus. X, 1858—61, p. 262.

Collection-Vermeulen: Coast Senegal.

D. VIII, I, 27—28; A. II, I, 27—28.

Depth $2\frac{5}{6}$ —3⁺ in total, rather variable (var. *ectenurus* Jord. & Osgood!).

Colour: a narrow black edge to vertical fins.

Length 21—25 cM.

Nomen vulgare: *Burai canejo*.

Both sides of Atlantic.

421. *Seriola dumerili* Risso.

Seriola dumerili, Günther, Catalogue Fishes II, p. 462; Steind., Sitzb. Wien, LVII, p. 390; Id. Denkschr. Wien, XLIV, p. 36, Senegal; Rochebrune, Faune Sénégal., l. c. p. 100; Pellegrin, Ann. Monaco VI, 4, p. 67, Dakar.

Both sides of Atlantic.

422. *Lichia amia* L.

Lichia amia, Günther, Catalogue Fishes II, p. 476; Steind., Denkschr. Wien, XLIV, p. 38, Senegal; Rochebrune, Faune Sénégal., l. c. p. 101; Osorio, Jorn. Lisboa (II) V, p. 198, St. Thomé, Angola; Pellegrin, Ann. Monaco VI, 4, p. 68, Senegal.

Porthmeus argenteus, Bleeker, Poissons Guinée, l. c. p. 79; Günther, Catalogue Fishes II, p. 471. (Up to Cape of G. H.) Lütken, Spolia Atlantica 1880, p. 600.

Collection-Vermeulen: Gorrei (Rio d'Ouro).

D. VII, I, 20—24 (!); A. II, I, 20—21.

Head 5. Depth 4^{+} . Eye 5. First dorsal ray 1^{+} — $1\frac{3}{8}$. Caudal longer, $2\frac{1}{2}$ in body without caudal, $2\frac{4}{5}$ in length to end of middle caudal rays. Ventral 2— in head. Pectoral $1\frac{2}{5}$. When the fish has reached a length of about 50 cm. the fins actually stop growing.

Length 52—67 cm.

Nomen vulgare: *Dorado*.

423. *Lichia glauca* L.

Lichia glauca, Valenciennes, Iles Canaries, p. 56, pl. 13, fig. 1; Günther, Catalogue Fishes II, p. 477; Steind., Sitzb. Wien, LVII, I, 1868, p. 392; Id., Denkschr. Wien, XLIV, p. 38; Rochebrune, Faune Sénégal., l. c. p. 101; Osorio, Jorn. Lisboa (II) V, p. 198, Angola; Pellegrin, Ann. Monaco VI, 4, p. 68, Cape Blanco, Konakry; Ehrenbaum, Fischerbote VI, 1914, p. 340, Cameroon.

Glaucus rondeleti, Bleeker, Poissons Guinée, l. c. p. 75—76.

Collection-Vermeulen: Coast Senegal.

D. VI, I, 26; A. II, I, 24.

Depth $2\frac{2}{3}$ in body, 4^{-} in length to end of middle caudal rays.

Length 36.5 cm.

Nomen vulgare: *palometa*.

424. *Lichia vadigo* Risso.

Lichia vadigo, Günther, Catalogue Fishes II, p. 478; Steind., Denkschr. Wien, XLIV, p. 38; Rochebrune, Faune Sénégal., l. c. p. 102; Pellegrin, Ann. Monaco VI, 4, p. 69, Lévrierbay, Dakar.

Collection-Vermeulen: Cape Blanco.

D. VII, I, 27—30; A. II, I, 24—26.

Head $4\frac{2}{3}$. Depth $4\frac{2}{7}$. Dorsal spines still connected by membrane.

Length 25—49 cm.

Nomen vulgare: *Lirio*.

425. *Chlorinemus saliens* Bl.?

Lichia calcar, Günther, Catalogue Fishes II, p. 479, Guinea; (doubtful species); Rochebrune, Faune Sénégal., l. c. p. 102.

426. *Temnodon saltator* L.

Temnodon saltator, Günther, Catalogue Fishes II, p. 479; Steind., Sitzb. Wien, LVII, p. 394; Rochebrune, Faune Sénégal., l. c. p. 102; Osorio, Jorn. Lisboa (II) V, p. 198, St. Thomé; Pellegrin, Ann. Monaco VI, 4, p. 68, Lévrierbay, Angola.

? *Sparactodon nainal*, Rochebrune, Faune Sénégal., l. c. p. 68.

Both sides of Atlantic.

Collection-Vermeulen: Gorrei (Rio d'Ouro).

D. VII, I, 23; A. I, I, 26; D.l. 85.

Head = depth = $4\frac{1}{2}$ in total. Eye $5\frac{1}{4}$. Snout 4-. Interorbital $4\frac{1}{3}$. Maxillary $2\frac{1}{6}$, reaching past eye with a conspicuous knob, fitting in a suborbital notch. Praemaxillary with 17 teeth, conical, somewhat flattened, decrescent backwards, a row of interior smaller ones. Lower jaw much projecting, 16 teeth. Villiform teeth on palatine and vomer (in a triangle). Inferior limb of praeopercle slightly serrate. Lateral line convex from shoulder to tail, or straight, or even a little concave. Dorsal with a conspicuous, continuous membrane between the spines. Soft dorsal somewhat falciform, the anterior rays $2\frac{2}{7}$ in head. Caudal plicable, lower lobe longer. Anal like dorsal, the free spine rudimentary. Pectoral pointed but falcate, $1\frac{4}{7}$ in head. Ventral $1\frac{2}{11}$ in head.

Colour: Upper margin of maxillary dusky. First dorsal deep black, pectoral base and axil black; pectoral dusky on both sides, with a paler proximal blotch.

Length 44.5 cM.

Nomen vulgare: *Anchova*.

Both sides of Atlantic.

427. *Trachinotus ovatus* L.

Trachinotus ovatus, Günther, Catalogue Fishes II, p. 480; Steind., Notes Leyden Mus. XVI, p. 21, Liberia; Id., Sitzb. Wien, LX, 1870, p. 709, Senegal; Rochebrune, Faune Sénégal., l. c. p. 105; Pellegrin, Ann. Monaco VI, 4, p. 69, Cape Blanco, Congo; Ehrenbaum, Fischerbote VI, 1914, p. 338, Cameroon.

" *rhomboides*, *spinosus*, *fuscus*, *teraia*, Cuvier & Valenciennes, op. cit. VIII, p. 407—418.

" *goreënsis*, Bleeker, Poissons Guinée, l. c. p. 77 (nec Cuv. & Val.).

Both sides of Atlantic.

428. *Trachinotus teraoides* Guich.

Trachinotus teraoides, A. Duméril, Arch. Mus. X, p. 246; Steind., Sitzb. Wien, LX, 1870, p. 710, Senegal; Rochebrune, Faune Sénégal., l. c. p. 106.

429. *Trachinotus goreënsis* C. V.

Trachinotus goreënsis, Günther, Catalogue Fishes II, p. 483; Troschel, Arch. Naturgesch. 1866, I, p. 226, Capeverde; Steind., Sitzb. Wien, LX, 1870, p. 707, Senegal; Osorio, Jorn. Lisboa (II) V, p. 198, Gulf of Guinea, Angola; Pellegrin, Ann. Monaco VI, 4, p. 69, Konakry, Congo; Ehrenbaum, Fischerbote VI, 1914, p. 339, Cameroon.

" *myrias* (C. V.) Günther, Catalogue Fishes II, p. 483, Pellegrin, Ann. Monaco VI, 4, 1914, p. 69.

" *maxillosus* (C. V.) Bleeker, Poissons Guinée, l. c. p. 78.

? *Trachinotus martini*, Steind., Sitzb. Wien, LX, 1870, p. 711. Senegal.

Trachinotus angustatus, Reichenow, Sitzb. Gesellsch. Naturf. Tr. Berlin, 1875, p. 147, Loango.

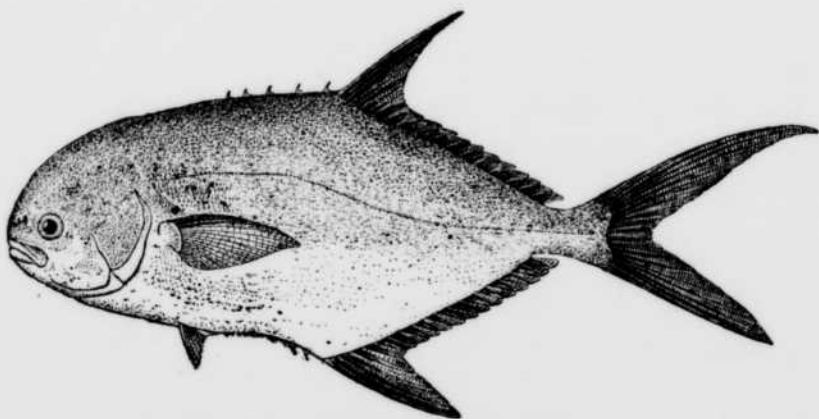


Fig. 59. *Trachinotus goreënsis* C. V. $\times \frac{1}{7}$. Adult.

Collection-Vermeulen: Cape Blanco.

D. VI, I, 20; A. II, I, 20.

Head $5\frac{3}{5}$ (!). Depth (between insertion soft vertical fins) 3 in

total. Depth in anal region $27/13$ in body without caudal. Eye = snout = $4+$. Interorbital $2\frac{1}{7}$. First dorsal ray a trifle longer than head, reaching base of 15th ray. First anal ray somewhat shorter than head, reaching base of 15th ray. Upper caudal lobe 3 in total. Pectoral = anal. Ventral reaching $\frac{2}{3}$ the distance to vent.

Colour: no black spot on dorsal fin.

Our specimen agrees best with the description of Reichenow.

N.B. The young *Trachinotus* described by Steindachner as *T. martini* may be the juv. of this species. The extreme differences in size donot allow direct comparison.

Length 72 cM.

Nomen vulgare: *Cojinoro*.

Both sides of Atlantic.

RHACHICENTRIDAE.

430. *Rhachicentrum nigrum* Bl.

Elacate nigra, Günther, Catalogue Fishes II, p. 375.

Elacata mottah (C. V.), Rochebrune, Faune Sénégalamb., l. c., p. 96.

Both sides of Atlantic.

SCOMBRIDAE.

431. *Scomber scomber* L.

Scomber scomber, Günther, Catalogue Fishes II, p. 357; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 318, Canaries. Both sides of Atlantic.

432. *Scomber colias* L.

Scomber colias, Günther, Catalogue Fishes II, p. 361; Steind., Sitzb. Wien, LVII, 1868, p. 353, Teneriffa; Pellegrin, Ann. Monaco VI, 4, p. 70, Angola.

" *pneumatophorus* (de la Roche), Günther, Catalogue Fishes II, p. 359; Rochebrune, Faune Sénégalamb., l. c. p. 94. Both sides of Atlantic.

433. *Thynnus thunnina* C. V.

Thynnus thunnina, Steind., Sitzb. Wien, LVII, 1868, p. 356, Spain; Pellegrin, Ann. Monaco VI, 4, p. 70, Senegal, Angola.

Collection-Vermeulen: Cape Blanco.

D. XVI, 1, 11, VIII; A. II, 12. VII.

Head $3\frac{5}{5}$ —4. Depth 4—5 in length to end of middle caudal rays.

No vomer or palatine teeth developed. Pectoral $7\frac{1}{2}$ in length, reaching 10th dorsal spine.

Length 48—63 cm.

Nomen vulgare: *Corriuelo*.

Both sides of Atlantic.

434. *Thynnus pelamys* L.

Thynnus pelamys, Günther, Catalogue Fishes II, p. 364; Vinciguerra, Atti Soc. Ital. Sc. Nat., XXXIV, p. 319, Canaries; Rochebrune, Faune Sénégalamb., l. c. p. 95.

Both sides of Atlantic.

435. *Thynnus alalonga* L.

Thynnus alalonga, Günther, Catalogue Fishes II, p. 366; Rochebrune, Faune Sénégalamb., l. c. p. 95; Pellegrin, Ann. Monaco VI, 4, p. 71, Mauretania.

Orycnus germo, Lütken, Spolia Atlantica 1880, p. 596.

436. *Pelamys sarda* Bl.

Pelamys sarda, Günther, Catalogue Fishes II, p. 367; Steind., Sitzb. Wien, LVII, 1868, p. 359; Rochebrune, Faune Sénégalamb., l. c. p. 95; Osorio, Jorn. Lisboa (II) V, p. 197, Angola; Pellegrin, Ann. Monaco VI, 4, p. 71, Dakar, Senegal.

Both sides of Atlantic.

437. *Pelamys unicolor* Guich.

Pelamys unicolor, Günther, Catalogue Fishes II, p. 368; Rochebrune, Faune Sénégalamb., l. c. p. 95.

438. ? *Cybium maculatum* Mitch.

? *Cybium maculatum*, Osorio, Jorn. Lisboa (II) V, p. 197, St. Thomé.

An american species.

439. *Cybium tritor* C. V.

Cybium tritor, Günther, Catalogue Fishes II, p. 372; A. Duméril, Arch. Mus. X, p. 262; Bleeker, Poissons Guinée, l. c. p. 72; Rochebrune, Faune Sénégal, l. c. p. 96; Osorio, Jorn. Lisboa (II) V, p. 197, Principe; Pellegrin, Ann. Monaco VI, 4, p. 71, Cape Blanco-Gabon.

Scomberomorus argyreus, Fowler, Proceed. Ac. N. Sc. Philad. LVI, 1904, p. 764.

Collection-Vermeulen: Cape Blanco.

D. XVII, III, 13, VIII; A. III, 15, VIII.

Teeth: $\frac{23}{18}$.

Length 52 cm.

Nomen vulgare: *Carita*.

Tropical Atlantic.

440. *Cybium cavalla* Cuv.

Scomberomorus cavalla, Jordan & Evermann, Fishes of N. & M. Am., l. c. p. 876, recorded from Africa. An American species, perhaps rightly united by Dresslar and Fesler (Bull. U.S. Fish Comm. VII, 1887, p. 444) with the former species.

441. *Naucrates ductor* L.

Naucrates ductor, Günther, Catalogue Fishes II, p. 374; Valenciennes, Iles Canaries, p. 56; Osorio, Jorn. Lisboa (II) V, p. 197, Anno Bom.

Both sides of Atlantic.

TRICHIURIDAE.

442. *Lepidopus caudatus* Euphr.

Lepidopus caudatus, Günther, Catalogue Fishes II, p. 344; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIII, p. 315, Canaries. Both sides of Atlantic.

443. *Aphanopus simonyi* Steind.

Aphanopus simonyi, Steind., Sitzb., Wien, Bd. C., 1891, p. 356, Canaries.

444. *Trichiurus lepturus* L.

Enchelyopus lepturus, Bleeker, Poissons Guinée, l. c. p. 73.

Trichiurus lepturus, Günther, Catalogue Fishes II, p. 346;

A. Duméril, Arch. Mus. X, p. 262; Rochebrune, Faune Sénégal., l. c. p. 94; Osorio, Jorn. Lisboa (II) V, p. 197, Angola; Pellegrin, Ann. Monaco VI, 4, p. 72, Lévrierbay, Angola.

Collection-Vermeulen: Baie de l'Ouest.

Nomen vulgare: *Espada*.

445. *Thyrsites pretiosus* Cocco.

Thyrsites pretiosus, Günther, Catalogue Fishes II, p. 351.

Ruvettus pretiosus, Steind., Sitzb. Wien, LVI, 1867, p. 704, Teneriffa; Id., C, 1891, p. 359, Canaries.
Both sides of Atlantic.

446. *Thyrsites prometheus* C. V.

Thyrsites prometheus, Günther, Catalogue Fishes II, p. 351: Steind., Sitzb. Wien, LVII, 1868, p. 990, Teneriffa.
Also known from St. Helena.

447. *Nesiarchus nasutus* Johns.

Nesiarchus nasutus, Steind., Sitzb. Wien LVI, 1867, p. 705, Teneriffa.

448. *Gempylus serpens* C. V.

Gempylus serpens, Günther, Catalogue Fishes II, p. 352; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 315, Canaries.
Both sides of Atlantic.

HISTIOPHORIDAE.

449. *Histiophorus gladius* Brown.

Histiophorus gladius, Rochebrune, Faune Sénégal., l. c. p. 108.
Both sides of Atlantic.

XIPHIIDAE.

450. *Xiphias gladius* L.

Xiphias gladius, Steind., Sitzb. Wien, LVII, 1868, p. 396, Teneriffa; Rochebrune, Faune Sénégal., l. c. p. 107.
Atlantic.

451. *Xiphias velifer* Cuv.

Xiphias velifer, Rochebrune, Faune Sénégal., l. c. p. 108; Günther, Cat. Fishes II, p. 512.

CORYPHAENIDAE.**452. *Coryphaena hippurus* L.**

Coryphaena hippurus, Steind., Sitzb. Wien, LVII, 1868, p. 370, Canaries; Id., Denkschr. Wien, XLV, Gorea; Pellegrin, Ann. Monaco VI, 4, p. 72, Mauretania.

Both sides of Atlantic.

453. *Coryphaena equisetis* C. V.

Coryphaena equisetis, Günther, Catalogue Fishes II, p. 407; Vinciguerra, Atti. Soc. Ital. Sc. Nat. XXXIV, p. 318, Canaries.

Both sides of Atlantic.

BRAMIDAE.**454. *Brama raii* Bl.**

Brama raii, Günther, Catalogue Fishes II, p. 408; Steind., Sitzb. Wien, LVII, 1868, p. 374, Canaries.

Both sides of Atlantic.

ZEIDAE.**455. *Zeus faber* L.**

Zeus faber, Günther, Catalogue Fishes II, p. 393; Steind., Sitzb. Wien, LVII, 1868, p. 364, Teneriffa; Pellegrin, Ann. Monaco VI, 4, p. 72, Lévrierbay-Dakar.

Collection-Vermeulen: Gorrei (Rio d'Ouro), juv. from Cape Blanco. D. X, 22 (!)—24; A. IV, 22—23.

Only traces of scapular spines present.

6—7 spiniferous osseous plates above and below.

Juv.: Ventral long, 2 in length without caudal.

Colour: brownish, body and head ornated with about 8 longitudinal stripes. The black lateral spot distinctly ocellated, as large as the eye. Spinous dorsal and anal with a few dusky spots. Ventrals dark, specially at tip. Other fins pale.

Length up to 36 cM.

PLEURONECTIDAE.**456. *Psettodes bennettii* Steind.**

Psettodes bennettii, Steind., Sitzb. Wien, LX, 1870, p. 976, Senegal; Peters, Monatsber. Berlin 1876, p. 249, Victoria.

457. *Psettodes erumei* Blkr.

Hippoglossus erumei, Bleeker, Poissons Guinée, l. c. p. 13.

Psettodes erumei, Günther, Catalogue Fishes IV, p. 402; A. Duméril, Arch. Mus. X, p. 264; Rochebrune, Faune Sénégalamb., l. c. p. 138; Osorio, Jorn. Lisboa (II) V, p. 199, Bissau; Ehrenbaum, Fischerbote V, 1913, p. 361, Cameroon; Pellegrin, Ann. Monaco VI, 4, p. 73, Mauretania.

Collection-Vermeulen: Cape Blanco.

D. 51; A. 36; p. 15—16; V. 6; L. l. 72.

Head 4 in body, $4\frac{2}{3}$ in total. Depth $2\frac{5}{6}$ ($3\frac{1}{4}$). Upper eye 6 i. h. Maxillary $1\frac{2}{5}$. Caudal $1\frac{1}{6}$ in head without flap, $5\frac{3}{4}$ in body. Left pectoral 2+, right one 2- i. h.

Colour: vertical fins coloured on both sides.

N.B. Steind., (Sitzb. Wien, LX, p. 976) does not seem to have consulted the original paper of Dr. Bleeker, where the depth is given: „ $2\frac{6}{7}$ —3 in corporis longitudine”. If *Ps. bennetti* Steindachner is really distinct from *Ps. erumei*, the chief difference would rather consist in the shorter pectoral with fewer rays than in the depth.

Length 33 cm.

Nomen vulgare: *Lenguado de Altura*.

458. *Rhombus senegalensis* Kaup.

Rhombus senegalensis, Rochebrune, Faune Sénégalamb., l. c. p. 138.

459. *Arnoglossus aspilus* Blkr.

Arnoglossus aspilus, Osorio, Jorn. Lisboa (II) II, p. 52, Angola. An Indian species.

460. *Citharichthys spilopterus* Gnthr.

Citharichthys spilopterus, Günther, Catalogue Fishes IV, p. 421; Steind., Sitzb. Wien, LX, 1870, p. 975, Senegal. Both sides of Atlantic.

461. *Hemirhombus aramaca* Cuv.

Hemirhombus aramaca, Osorio, Jorn. Lisboa (II) V, p. 199, St. Thomé, Gulf of Guinea.

Syacium papillosum, Jordan & Goss, Pleuronectidae of America and Europe, Rep. U. S. Fish. Comm. for 1886, p. 269.

Syacium papillosum, Jordan & Evermann, Fishes of N. & M. Am. III, p. 2671.

Both sides of Atlantic.

462. *Hemirhombus guineënsis* Blkr.

Hemirhombus guineënsis, Bleeker, Poissons Guinée, l. c. p. 25, pl. III; Steind., Notes Leyden Mus. XVI, p. 51, Liberia; Id., Denkschr. Wien, XLV, p. 13, Gorea; Osorio, Jorn. Lisboa (II) V, p. 199, St. Thomé; Pellegrin, Ann. Monaco VI, 4, p. 73, Lévrierbay, Angola.

Collection-Vermeulen: Gorrei (Rio d'Ouro).

Head $3\frac{6}{7}$ — $4\frac{1}{3}$ in body ($4\frac{3}{5}$ —5 in total). Depth $2\frac{2}{9}$ — $2\frac{1}{3}$ + ($2\frac{2}{3}$ — $2\frac{5}{6}$). Female: pectoral $1\frac{3}{7}$ in head. Male: pectoral much longer than head.

Length 26—28 cM.

463. *Hemirhombus stampfli* Steind.

Hemirhombus stampfli, Steind., Notes Leyden Mus. XVI, p. 52, Liberia; Pellegrin, Ann. Monaco VI, 4, p. 73, Konakry, Ivorycoast, Dahomey.

464. *Rhomboidichthys podas* Delar.

♀ *Bothus podas*, Günther, Catalogue Fishes IV, p. 432; Steind., Sitzb. Wien, LVII, 1868, p. 714, Teneriffa; Osorio, Jorn. Lisboa (II) II, p. 129, St. Thomé; Ehrenbaum, Fischerbote V, 1913, p. 362, Cameroon.

♂ " *rhomboides*, Steind., Sitzb. Wien, LVII, p. 717, 1868, Teneriffa.

Rhomboidichthys mancus, Günther, Catalogue Fishes IV, p. 432; Pellegrin, Ann. Monaco VI, 4, p. 74, Mauretiana.

Rhombus serratus, Valenciennes, Iles Canaries, p. 82, pl. 18.

465. *Rhomboidichthys lunatus* L.

Rhomboidichthys lunatus, Günther, Catalogue Fishes IV, 4, p. 433; Osorio, Jorn. Lisboa (II) III, p. 179, St. Thomé.

Both sides of Atlantic.

466. *Solea vulgaris* Quensel.

Solea vulgaris, Günther, Catalogue Fishes IV, p. 463; Pellegrin, Ann. Monaco VI, 4, p. 74, Lévrierbay.

467. *Solea vulgaris melanochira* Moreau.

Solea vulgaris var. *melanochira*, Pellegrin, Ann. Monaco VI, 4, p. 74, Lévrierbay.

468. *Solea senegalensis* Kaup.

Solea senegalensis, Günther, Catalogue Fishes IV, p. 464; Rochebrune, Faune Sénégal., l.c. p. 138; Pellegrin, Ann. Monaco VI, 4, p. 74, Senegal.

Collection-Vermeulen: Cansadobay.

D. 84—89; A. 67—73; P. 8; L. l. 125—128.

Head $5\frac{1}{2}$ in body without caudal, depth 3—3⁺. Profile of snout blunt. Eye 5 in head. Interorbital nearly flat. Dorsal beginning above anterior border of upper eye. Pectoral: at blind side $2\frac{1}{2}$ in head, at other side 2. Scales of blind side very rough.

Colour: Pectoral of coloured side black on both sides.

Length 10—35 cM., and juv.

469. *Solea senegalensis m'baoensis* Pell.

Solea senegalensis var. *m'baoensis*, Pellegrin, Ann. Monaco VI, 4, p. 75, Senegal.

Collection-Vermeulen: Cape Blanco.

D. 82—83; A. 67—70; P. 8; L. l. 119—124.

Depth $3\frac{1}{3}$ — $3\frac{3}{4}$. Pectoral 2— in head. Lateral line with posterior limb of the capital arch steeper than the anterior one.

Colour: pectoral with a black tip only.

Length 13—16 cM.

470. *Solea ocellata* L.

Solea ocellata, Günther, Catalogue Fishes IV, p. 465; Steind., Sitzb. Wien, LVII, p. 724, Teneriffa.

471. *Solea lascaris* Risso.

Solea lascaris, Günther, Catalogue Fishes IV, p. 467; Steind., Sitzb. Wien, LVII, p. 725 (Gibraltar); Pellegrin, Ann. Monaco VI, 4, p. 76, Lévrierbay, Angola.

„ *scriba*, Valenciennes, Iles Canaries, p. 84, pl. 18.

Collection-Vermeulen: Cape Blanco.

D. 82; A. 65.

Head 5- in length. Snout $2\frac{2}{3}$. Upper jaw overlapping the other. Pectoral 2 i. h.

Colour: pectoral ocellus white-seamed. Body pale with widely and regularly scattered white spots (differing considerably from the description of authors).

Length 185 mM.

472. *Solea hexophthalma* Bennett.

Solea hexophthalma, Günther, Catalogue Fishes IV, p. 465; Pellegrin, Ann. Monaco VI, 4, p. 76, Mauretania.

473. *Solea lutea* Risso.

Solea lutea, Günther, Catalogue Fishes IV, p. 469; Pellegrin Ann. Monaco VI, 4, p. 76, Hann.

474. *Solea triophthalma* Blkr.

Solea triophthalma, Bleeker, Poissons Guinée, l. c. p. 27; Pellegrin, Ann. Monaco VI, 4, p. 76, Dakar.

475. *Solea chirophthalmus* Regan.

Solea chirophthalmus, Regan, Ann. Mag. Nat. Hist. (8) XV, p. 129, Lagos.

476. *Solea vermeuleni* nov. spec.

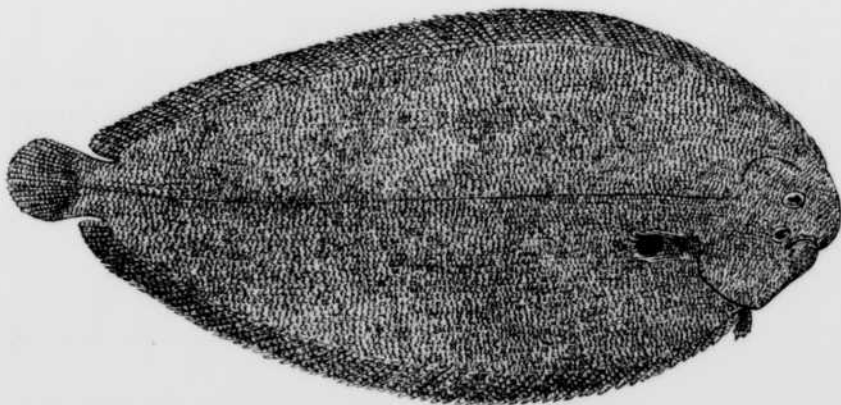


Fig. 60. *Solea vermeuleni* nov. spec. $\times \frac{1}{3}$.

Collection-Vermeulen: Cape Blanco.

D. 86; A. 70; P. 8; L. l. 135 on coloured, 140 on blind side, counted from opercular spot. (Lat. line straight.)

Head 5- ($5\frac{1}{2}$ in total). Depth $2\frac{2}{5}$ (!), ($2\frac{7}{10}$ in total). Eye = inter-orbital width. Upper jaw projecting hook-like. Nostril on blind side wide and broadly fringed. Scales rough on coloured side, smooth and ciliated on blind side. For the rest it is like *S. aurantiaca* Gnthr.

Colour: brownish, very faintly spotted. Pectoral with an extremely sharply defined black ocellus on its distal half. No other markings.

Length 33.5 cm.

N. B. *Solea aurantiaca* has ctenoid scales on both sides according to Steindachner.

477. *Synaptura punctatissima* Peters.

Synaptura punctatissima, Peters, Verh. Ac. Berl. XLI, p. 249; Steind., Sitzb. Wien, LXXXIII, 1881, p. 207; Pellegrin, Ann. Monaco VI, 4, p. 77, Konakry, Libreville; Ehrenbaum, Fischerbote V, 1913, p. 506 (fig.), Cameroon.

478. *Synaptura punctatissima nigromaculata* Pell.

Synaptura punctatissima var. *nigromaculata*, Pellegrin, Ann. Monaco VI, 4, p. 77, Lévrierbay.

Collection-Vermeulen: West-Africa.

D. 80; A. 62; L. l. 130, on coloured side, 156 on blind side, counted from opercular angle.

Head 7 in total, depth $4\frac{1}{3}$ — $4\frac{1}{2}$.

Length 28—36 cm.

479. *Cynoglossus senegalensis* Kaup.

Cynoglossus senegalensis, Günther, Catalogue Fishes IV, p. 502; Rochebrune, Faune Sénégal., l. c. p. 139; Steind., Notes Leyden Mus. XVI, p. 50, Liberia; Osorio, Jorn. Lisboa (II) V, p. 199, Bissau; Pellegrin, Ann. Monaco VI, 4, p. 78, Dahomey. Ehrenbaum, Fischerbote V, p. 359, Cameroon.

480. *Cynoglossus canariensis* Steind.

Cynoglossus canariensis, Steind., Denkschr. Wien, XLV, p. 13, Canaries.

" *lagoensis*, Regan, Ann. Mag. Nat. Hist. (8) XV, p. 129, Lagos.

Collection-Vermeulen: Coast Senegal.

D. 126; A. 100; L. 1. 102 on middle line from cross line to caudal.

Head 5+ in total, depth 4½. Snout 3½. Upper narine between front margins of eye. Lower eye with its posterior margin in a vertical with the corner of mouth cleft, as is the case in *C. lagoensis* of Regan, not in the much smaller specimen of Steindachner. 12 scales between first and second lateral line.

Length 40 cm.

481. *Cynoglossus goreënsis* Steind.

Cynoglossus goreënsis, Steind., Denkschr. Wien, XLV, p. 12, Gorea; Osorio, Jorn. Lisboa (II) V, p. 199, Angola; Regan, Ann. Mag. Nat. Hist. (8) XV, p. 129, Lagos; Pellegrin, Ann. Monaco VI, 4, p. 79, Konakry, Dakar.

GOBIIDAE.

482. *Gobius jozo* L.

Gobius jozo, Günther, Catalogue Fishes III, p. 12; Pellegrin, Ann. Monaco VI, 4, p. 79, Lévrierbay.

483. *Gobius soporator* C. V.

Gobius soporator, Steind., Notes Leyden Mus. XVI, p. 26, Liberia.

„ *nigri*, Günther, Catalogue Fishes III, p. 27.

Both sides of Atlantic.

484. *Gobius schlegeli* Gnthr.

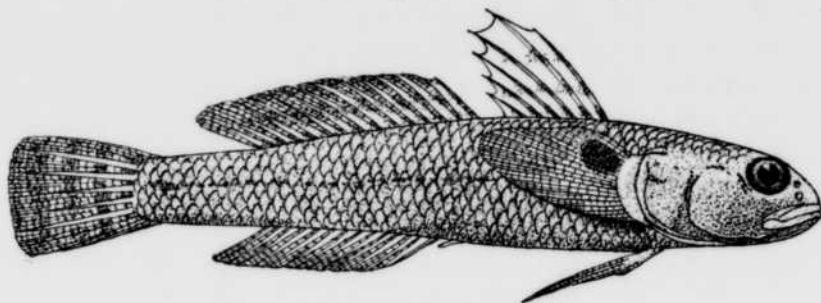
Gobius schlegeli, Günther, Catalogue Fishes III, p. 46; Bleeker, Poissons Guinée, l. c. p. 103; Regan, Ann. Mag. Nat. Hist. (8) XV, p. 128, Lagos. Pellegrin, op. cit. p. 79.

485. *Gobius paganellus* L.

Gobius paganellus, Günther, Catalogue Fishes III, p. 52; Steind., Sitzb. Wien, LVII, 1868 p. 413, Teneriffa.

486. *Gobius maderensis* C. V.

Gobius maderensis, Günther, Catalogue Fishes III, p. 57; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 321, Canaries.

487. *Gobius senegambiensis* nov. spec.Fig. 61. *Gobius senegambiensis* nov. spec. $\times 1\frac{5}{6}$.

Collection-Vermeulen: Cansadobay, Baie de l'Ouest.

D. VI, I, 14; A. I, 13.

Description of the largest specimen (57 mm.)

Head $4\frac{1}{4}$ in total. Depth $1\frac{4}{5}$ in head. Width of head $1\frac{4}{7}$ in its length. Eye 4. Interorbital very narrow. Maxillary $2\frac{3}{4}$. Pores: 2 larger ones on border of prae-operculum and one immediately behind eye. Dorsal spines elongate, the longest equal to head (in another specimen, probably female, somewhat shorter). Tip of last dorsal ray not quite reaching root of caudal. Ventral, pectoral and caudal nearly equal in length. Scales: 45 in lateral line from pectoral axil, 11 between origin of second dorsal and anal, 8 in a transverse series on caudal peduncle.

Colour: very pale, a dark streak from eye to mouth, a dark shade on cheek. A series of distinct, small points on sides, ending in a larger spot. Both dorsals with longitudinal, black stripes. Edge of anal black. Caudal spotted with brown. A distinct dark blotch on upper part of pectoral base, not reaching axil.

488. *Gobius (Chonophorus) tajasica* Licht.

Gobius tajasica, Steind., Notes Leyden Mus. XVI, p. 25, Liberia.

" *banana* (C. V.), Günther, Catalogue Fishes III, p. 59. Both sides of Atlantic.

(Freshwater forms excluded here).

489. *Periophthalmus koelreuteri* Pall.

Periophthalmus koelreuteri, Steind., Sitzb. Wien, LX, 1870, p. 945, Senegal. Pellegrin, op. cit. p. 80.

490. **Periophthalmus koelreuteri papilio** Bl. Schn.

Periophthalmus papilio, Rochebrune, Faune Sénégal., l. c.
p. 110; Osorio, Jorn. Lisboa (II) V, p. 198,
Gulf of Guinea, Angola.

" *koelreuteri* var. *papilio*, Pellegrin, Ann. Monaco,
VI, 4, p. 80, Ivorycoast-Guinea.

491. **Periophthalmus gabonicus** A. Dum.

Periophthalmus gabonicus, A. Duméril, Arch. Mus. X, X,
p. 250; Rochebrune, Faune Sénégal., l. c. p. 111.

492. **Periophthalmus erythronotus** Guich.

Periophthalmus erythronotus, A. Duméril, Arch. Mus., X,
p. 250; Rochebrune, Faune Sénégal., l. c., p. 111.

493. **Eleotris pisonis** Guich.

Eleotris gyrinus, Günther, Catalogue Fishes III, p. 122;
Pietschmann, Jahrb. Nassauer Ver. Naturk. LXVI,
1913, p. 182, Cameroon.

" *pisonis*, Steind., Notes Leyden Mus. XVI, p. 27,
Liberia (fresh water).
Both sides of Atlantic.

494. **Eleotris guavina** C. V.

Eleotris guavina, Günther, Catalogue Fishes III, p. 124;
Rochebrune, Faune Sénégal., l. c. p. 113.
Both sides of Atlantic.

495. **Eleotris vittata** A. Dum.

Eleotris vittata, A. Duméril, Arch. Mus. X, p. 249; Roche-
brune, Faune Sénégal., l. c. p. 113.

496. **Eleotris dumerili** Sauv.

Eleotris maculata, A. Duméril, Arch. Mus. X, p. 248, Gabon.
" *dumerilli*, Sauvage, Bull. Soc. Philom., Paris, 1880,
p. 52.

497. **Eleotris africana** Steind.

Eleotris africana, Steind., Sitzb. Wien, LXXX, p. 155, Sierra Leone; Osorio, Jorn. Lisboa (II) V, p. 198, Angola.

498. **Eleotris maltzani** Steind.

Eleotris maltzani, Steind., Denkschr. Wien, XLIV, p. 40, Senegal.

499. **Sicydium brevifile** Grant.

Sicydium brevifile, Pietschmann, Jahrb. Nassauer Ver. Naturk. LXVI, 1913, p. 183, Cameroon.

ECHENEIDAE.500. **Echeneis remora** L.

Echeneis remora, Günther, Catalogue Fishes II, p. 378; Rochebrune, Faune Sénégalamb., l. c. p. 97; Osorio, Jorn. Lisboa (II) V, p. 197, Capeverde, Bissau, Anno Bom.
Both sides of Atlantic.

501. **Echeneis naucrates** L.

Echeneis naucrates, Steind., Denkschr. Wien, XLIV, p. 34, Senegal; Id., Notes Leyden Mus. XVI, p. 22; Osorio, Jorn. Lisboa (II) V, p. 197; Rochebrune, Faune Sénégalamb., l. c. p. 97; Pellegrin, Ann. Monaco VI, 4, p. 80, Lévrierbay, Angola.

Collection-Vermeulen: Cape Blanco.

Nomen vulgare: *Pegadera*.

Both sides of Atlantic.

SCORPAENIDAE.502. **Sebastes dactylopterus** Delar.

Sebastes dactylopterus, Günther, Catalogue Fishes II, p. 99 (partim); Steind., Sitzb. Wien, LVI, 1867, p. 669, Teneriffa.
Both sides of Atlantic.

503. *Sebastes kuhlii* Bowd.

Sebastes kuhlii, Günther, Catalogue Fishes II, p. 102: Steind., Sitzb. Wien, LVI, 1867, p. 671; Osorio, Jorn. Lisboa (II) V, p. 196, St. Thomé.

" *filifer*, Valenciennes, Iles Canaries, p. 21, pl. II.

504. *Sebastes maderensis* C. V.

Sebastes maderensis, Günther, Catalogue Fishes II, p. 102; Steind., Sitzb. Wien, LVI, 1867, p. 673, Teneriffa.
Both sides of Atlantic.

505. *Scorpaena porcus* L.

Scorpaena porcus, Günther, Catalogue Fishes II, p. 107; Steind., Sitzb. Wien, LVI, 1867 p. 676, Canaries.

506. *Scorpaena scrofa* L.

Scorpaena scrofa, Günther, Catalogue Fishes II, p. 108: Troschel, Arch. Nat., 1866, p. 206; Rochebrune, Faune Sénégalamb., l. c. p. 85; Steind., Sitzb. Wien LVI, 1867, p. 677, Canaries.

Collection-Vermeulen: Gorrei (Rio d'Ouro).

D. XII, 10—11: A. III, 5; P. 16—17.

Head $2\frac{2}{5}$ in body without caudal. Interorbital half the orbit, $7\frac{1}{2}$ in head. Orbit $3\frac{1}{2}$ i. h. Orbital tentacles weakly developed, partly wanting. Maxillary $2\frac{2}{7}$.

Nomen vulgare: *Racacio*.

507. *Scorpaena ustulata* Lowe.

Scorpaena ustulata, Günther, Catalogue Fishes II, p. 110; Rochebrune, Faune Sénégalamb., l. c. p. 86; Pellegrin, Ann. Monaco VI, 4, p. 81, Cape Blanco, Senegal.

" *teneriffa*, Jordan & Gunn, Proc. Philad. 1898, p. 345, Canaries.

508. *Scorpaena senegalensis* Steind.

Scorpaena senegalensis, Steind., Denkschr. Wien, XLIV, p. 31, Senegal; Osorio, Jorn. Lisboa (II) II, p. 112, St. Thomé; Rochebrune, Faune Sénégalamb., l. c. p. 86.

509. *Scorpaena laevis* Trosch.

Scorpaena laevis, Troschel, Arch. Nat. 1866, I, p. 206, Cape-verde; Osorio, Jorn. Lisboa (II) V, p. 196, Angola.

510. *Scorpaena rubellio* Jord. & Gunn.

Scorpaena rubellio, Jordan & Gunn, Proc. Ac. Philad., 1898, p. 344, Canaries.
Probably identical with the preceeding species.

PLATYCEPHALIDAE.

511. *Platycephalus gruvelli* Pellegrin.

Platycephalus gruvelli, Pellegrin, Ann. Monaco VI, 4, p. 81, Dakar; Regan, Ann. Mag. Nat. Hist. (8) XV, p. 128, Lagos.

TRIGLIDAE.

512. *Trigla hirundo* L.

Trigla hirundo, Günther, Catalogue Fishes II, p. 202; Steind., Sitzb. Wien, LVI, 1867, p. 683, Teneriffa; Pellegrin, Ann. Monaco VI, 4, p. 83, Cape Blanco, Gorea.

Collection-Vermeulen: Gorrei (Rio d'Ouro).

Length 56 cm.

Nomen vulgare: *Rubio*.

513. *Trigla lineata* L.

Trigla lineata, Steind., Sitzb. Wien, LVI, 1867, p. 681, Teneriffa; Id., Denkschr. Wien, XLIV, p. 32, Senegal.

Collection-Vermeulen: Cape Blanco.

Nomen vulgare: *Rubio*.

514. *Trigla obscura* L.

Trigla obscura, Steind., Sitzb. Wien, LVI, 1868, p. 689, Teneriffa.

515. *Lepidotrigla cadmani* Regan.

Lepidotrigla cadmani, Regan, Ann. Mag. Nat. Hist. (8) XV, p. 128, Lagos.

DACTYLOPTERIDAE.**516. *Dactylopterus spinarella* L.**

Cephalacanthus spinarella, Günther, Catalogue Fishes II, p. 224 ;
Bleeker, Poissons Guinée, p. 7.

517. *Dactylopterus volitans* L.

Dactylopterus volitans, Steind., Sitzb. Wien, LVI, 1867, p. 693,
Teneriffa; Osorio, Jorn. Lisboa (II) V, p. 197, Capeverde, Angola;
Rochebrune, Faune Sénégal, l. c. p. 86; Pellegrin, Ann.
Monaco VI, 4, p. 83, Gorea.

Both sides of Atlantic.

Collection-Vermeulen: Coast Senegal.

TRACHINIDAE.**518. *Trachinus draco* L.**

Trachinus draco, Günther, Catalogue Fishes II, p. 233;
Steind., Sitzb. Wien, LVI, 1867, p. 696, Teneriffa.
" *armatus*, Osorio, Jorn. Lisboa (II) V, p. 197, Angola.

519. *Trachinus radiatus* Delar.

Trachinus araneus, Steind., Sitzb. Wien, LVI, 1867, p. 698,
Teneriffa; Osorio, Jorn. Lisboa (II) V, p. 197,
Angola.
" *radiatus*, Günther, Catalogue Fishes II, p. 236;
Osorio, Jorn. Lisboa (II) II, p. 236.
Pseudotrachinus pardalis var., Bleeker, Poissons Guinée, l. c., p. 95.

Collection-Vermeulen: Rio d'Ouro.

D. VI, 26; A. 27; L. l. 73.

Depth 5 in total.

Length 41 cm.

520. *Trachinus vipera* C. V.

Trachinus vipera, Steind., Sitzb. Wien, LVI, 1867, p. 697,
Teneriffa.

521. *Trachinus lineolatus* Fischer.

Trachinus lineolatus, Fischer, Jahrb. Hamb. Wiss. Anstalt., 1885, p. 67, St. Thomé.

URANOSCOPIDAE.

522. *Uranoscopus scaber* L.

Uranoscopus scaber, Steind., Sitzb. Wien, LVI, 1867, p. 695, Teneriffa; Pellegrin, Ann. Monaco VI, 4, p. 84, Nouakchott.

Collection-Vermeulen: Cape Blanco.

D. VI, 1, 14; A. 14; P. 17; 63 oblique rows of scales.

Head 4 in total. Four supraocular spines. Humeral spine 4 in pectoral. Mandibular flap filamentous.

Length 42 cm.

523. *Uranoscopus occidentalis* Agass.

Uranoscopus occidentalis, Günther, Catalogue Fishes II, p. 227; Bleeker, Poissons Guinée, l. c. p. 7.
An American species.

524. *Uranoscopus albesca* Regan.

Uranoscopus albesca, Regan, Ann. Mag. Hist. (8) XV, p. 127, Lagos.

GOBIESOCIDAE.

525. *Lepadogaster bimaculatus* Penn.

Lepadogaster bimaculatus, Steind., Sitzb. Wien, LVII, 1868, p. 686, Teneriffa; Pellegrin, Ann. Monaco VI, 4, p. 84, Senegal.

526. *Lepadogaster gouani* Lac.

Lepadogaster gouanii, Steind., Sitzb. Wien, LVII, 1868, p. 686, Teneriffa.

BLENNIIDAE.

527. *Blennius goreënsis* Cuv. Val.

Blennius goreënsis, Cuvier & Valenciennes, Hist. Nat. Poiss. XI, p. 255; Rochebrune, Faune Sénégal, l. c. p. 115.

528. **Blennius tentacularis** Brunn.

Blennius tentacularis, Günther, Catalogue Fishes III, p. 215;
Pellegrin, Ann. Monaco VI, 4, p. 84, Senegal.

529. **Blennius sanguinolentus** Pall.

Blennius palmicornis, Cuvier & Valenciennes, Hist. Nat.
Poiss. XI, p. 214.

" *sanguinolentus*, Günther, Catalogue Fishes III, p. 218;
Troschel, Arch. Naturgesch. 1866, I, p. 228, Capeverde; Pietsch-
mann, Jahrb. Nassauer Ver. Naturk. LXVI, 1913, p. 188,
Cameroon; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 321,
Canaries.

530. **Blennius galerita** L.

Blennius galerita, Günther, Catalogue Fishes III, p. 222;
Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV,
p. 321, Canaries; Osorio, Jorn. Lisboa (II) V, p. 198,
St. Thomé.

" *montagui*, Pietschmann, l. c., p. 187, Cameroon.

531. **Blennius cristatus** L.

Blennius cristatus, Günther, Catalogue Fishes III, p. 223;
Steind., Notes Leyden Mus. XVI, p. 30, Liberia; Pellegrin,
Ann. Monaco VI, 4, p. 85, Guinea.
Both sides of Atlantic.

532. **Blennius trigloides** C. V.

Blennius trigloides, Günther, Catalogue Fishes III, p. 227;
Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 321, Canaries.

533. **Blennius bouveri** Rochebr.

Blennius bouveri, Rochebrune, Faune Séné gamb., l. c. p. 115,
pl. V.

534. *Blennius canariensis* Jord. & Gunn.

Blennius canariensis, Jordan & Gunn, Proc. Ac. Philad. 1898,
p. 346, Canaries.

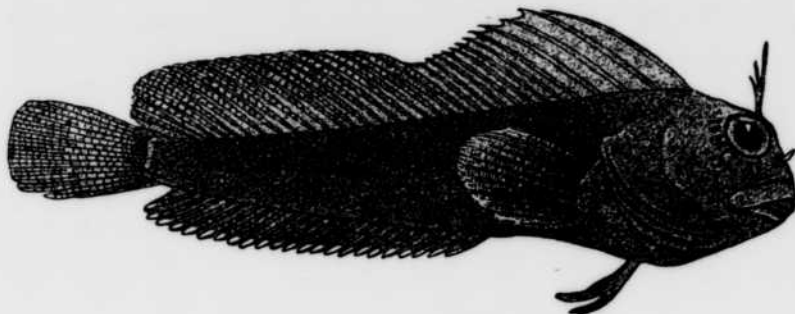
535. *Blennius niger* nov. spec.

Fig. 62. *Blennius niger* nov. spec. $\times \frac{5}{4}$.

Collection-Vermeulen: Rio d'Ouro.

One male.

D. XII, 21; A. 23.

Head 4, depth 5 in total. Eye $3\frac{1}{2}$ in head. Interorbital very narrow, 5 in eye. Snout (with teeth) 3 i. h., obtuse, upper profile abruptly descending.

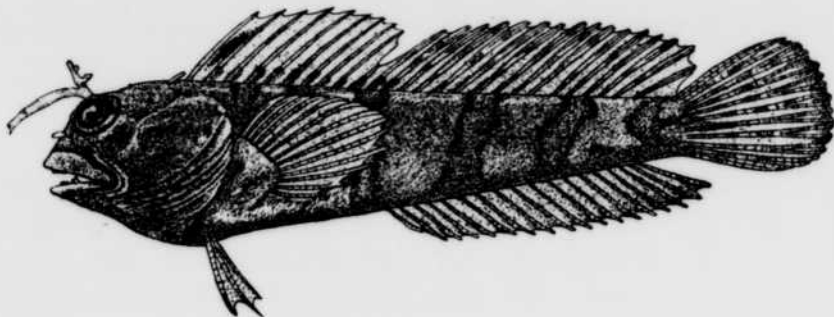
Teeth: $\frac{\text{I. 26. I}}{\text{I. 16. I}}$ (Canini strong).

Orbital tentacles multifid, with 5 lobes, the exterior longest, $1\frac{1}{3}$ of length of head. Anterior nostril with a small, slender flap, none on nape. Dorsal inserted above margin of praeopercle, continuous, extending to caudal but not united with same, the second ray $5\frac{1}{2}$ in total. Anal papillae. Ventrals inserted somewhat behind origin of dorsals, 7 in total.

Colour: black, no trace of markings anywhere except the white tips of anal rays. There may have been a black spot between first and second dorsal spine.

Length 83 mm.

Differs from *B. pilicornis* C. V. in the larger head, the steeper profile, the form of the dorsal and the colour.

536. *Blennius rioudourensis* nov. spec.Fig. 63. *Blennius rioudourensis* nov. spec. $\times \frac{9}{5}$.

Collection-Vermeulen: Rio d'Ouro.

D. X (!), 16; A. 18; P. 13, C. 13, V. I, 3.

Head $3\frac{1}{3}$ in body, ($4\frac{1}{2}$ in total). Depth in pelvic region 4 (5^-). Eye $4\frac{1}{2}$. Bony interorbital narrow, 2 in eye. Snout with teeth $3\frac{2}{3}$ i. h. Profile rather steep. Distinct lips at both jaws. Maxillary reaching past border of eye.

Teeth: $\frac{\text{I } 31 \text{ I}}{\text{II } 23 \text{ II}}$, in a single series, immovable. Orbital tentacles bifid, the posterior part branched, 2 in head. Nasal tentacles small. A pair of small flaps on nape, graduated, with 4 lobules at the edge. Vertical fins not continuous with caudal. Dorsal inserted above margin of praeopercle, scarcely notched between the two divisions. Second spine $6\frac{2}{3}$ in total. Anal with subterminal small knobs at the rays. Ventrals inserted behind origin of dorsal, $6\frac{1}{3}$ in total, the spine rudimentary.

Colour: Brownish gray with 5 sharply defined crossbars extending but little on dorsal. Fins pellucid, very finely punctilate. No other markings.

Length 62 mm.

537. *Blennophis webbii* Val.

Blennophis webbii, Valenciennes, Iles Canaries, p. 61, pl. 20; Günther, Catalogue Fishes III, p. 259.

538. *Salarias vomerinus* C. V.

Salarias vomerinus, Steind., Notes Leyden Mus. XVI, p. 30, Liberia.

539. *Salarias atlanticus* C. V.

Salarias atlanticus, Osorio, Jorn. Lisboa (II) V, p. 198, Anno Bom.
Both sides of Atlantic.

540. *Clinus nuchipinnis* Q. G.

Clinus nuchipinnis, Günther, Catalogue Fishes III, p. 262;
Osorio, Jorn. Lisboa (II) V, p. 198, St. Thomé, Capeverde;
Rochebrune, Faune Sénégal., l. c. p. 116; Vinci-
guerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 322,
Canaries.
" *canariensis*, Valenciennes, Iles Canaries, p. 60, pl. 17.
Both sides of Atlantic.

541. *Clinus pedatipinnis* Rochebr.

Clinus pedatipinnis, Rochebrune, Faune Sénégal., l. c.
p. 116, pl. VI.

BATRACHIDAE.

542. *Batrachus didactylus* Bl. Schn.

Batrachus didactylus, Günther, Catalogue Fishes III, p. 170;
Rochebrune, Faune Sénégal., l. c. p. 114;
Bleeker, Poissons Guinée, l. c. p. 101; Pellegrin,
Ann. Monaco VI, 4, p. 85, Lévrierbay, Senegal.
" *güntheri*, Bleeker, op. cit. p. 101.

Collection-Vermeulen: Cape Blanco.

Nomen vulgare: *sapo*.

N.B. *B. güntheri* Blkr. is founded upon the number of vomerine tooth-rows. This is, however, a character depending on age. We find one row at a length of 19.5 cM., 2 rows at 24 cM., 3 rows at 36 cM.

543. *Batrachus eliminensis* Blkr.

Batrachus eliminensis, Bleeker, Poissons Guinée, l. c., p. 98.

544. *Batrachus liberiensis* Steind.

Batrachus liberiensis, Steind., Sitzb. Wien, LV, 1867, p. 520,
pl. 1, Monrovia.

545. *Batrachus beninensis* Regan.

Batrachus beninensis, Regan, Ann. Mag. Nat. Hist. (8) XV,
p. 130, Lagos.

ZOARCIDAE.546. *Brotula barbata* Schn.

Brotula barbata, Regan, Ann. Mag. Nat. Hist. (8) XV,
p. 128, Lagos.
Both sides of Atlantic.

MASTACEMBELIDAE.547. *Mastacembelus cryptacanthus* Gnthr.

Mastacembelus cryptacanthus, Peters, Monatsber. Ac. Berl.,
1876, p. 248.

548. *Mastacembelus marcheii* Sauv.

Mastacembelus marcheii, Steind., Notes Leyden Mus. XVI,
p. 31, Liberia.

LOPHIIDAE.549. *Lophius budegassa* Spin.

Lophius budegassa, Steind., Sitzb. Wien, LVII, 1868, p. 421,
Cadix.

Collection-Vermeulen: Rio d'Ouro.
Not yet known so far southward.

ANTENNARIIDAE.550. *Antennarius pardalis* C. V.

Antennarius pardalis, Günther, Catalogue Fishes III, p. 198;
Rochebrune, Faune Sénégalamb., l. c. p. 114; Osorio, Jorn. Lisboa
(II) V, p. 198, Capeverde, Bissau; Pellegrin, Ann. Monaco VI,
4, p. 85, Senegal.
Both sides of Atlantic.

551. *Antennarius histrio* L.

Antennarius histrio, Notes Leyden Mus. XVI, p. 24, Liberia.
 " *marmoratus*, Günther, Catalogue Fishes III, p. 187; Rochebrune, Faune Sénégal., l. c. p. 114.
 Both sides of Atlantic.

552. *Antennarius commersonii* var. *campylacanthus* Blkr.

Antennarius campylacanthus, Bleeker. Poissons Guinée, l. c., p. 28.
 " *commersonii*, var. *campylacanthus*, Steind., Notes Leyden Mus. XVI, p. 23, Liberia.

BALISTIDAE.

553. *Monacanthus pardalis* Rüpp.

Monacanthus pardalis, Günther, Catalogue Fishes III, p. 230; Osorio, Jorn. Lisboa, (II) II, p. 135, St. Thomé; Id. V, p. 200, Angola.

554. *Monacanthus setifer* Benn.

Monacanthus setifer, Günther, Catalogue Fishes VIII, p. 239; Hollard, Ann. Sciences Natur. (4) II, 1854, p. 342; Rochebrune, Faune Sénégal., l. c. p. 177; Osorio, Jorn. Lisboa (II) V, p. 200, St. Thomé; Pellegrin, Ann. Monaco VI, 4, p. 86, Senegal.
 " *filamentosus*, Valenciennes, Iles Canaries, p. 95, pl. 16; Troschel, Arch. Naturgesch., 1866, I, p. 238, Capeverde.
 " *auriga*, Valenciennes, Iles Canaries, p. 95.

Collection-Vermeulen: Cape Blanco.

D. I, 32; A. 32; P. 13; C. 12.

Head to upper edge of branchial slit 3 in body (without caudal). Depth between insertions of vertical fins $1\frac{2}{3}$ —2 in same. Frontal profile rather concave (contrary to the figure of Valenciennes, but corresponding to that of Hollard). Dorsal spine with granulations and two rows of retrorse barbs, above hind-margin of orbit or immediately behind it. Second dorsal ray not produced. Scales with aborescent spinules, sometimes like the horns of a reindeer.

They are unlike those of *M. hispidus* of Jordan & Evermann. The scales on caudal peduncle not filamentous, which character always coincides with the prolongation of the dorsal ray.

Length 15—18 cM.

Nomen vulgare: *Cajo canario*.

N.B. The individual difformity is rather striking.

Both sides of Atlantic.

555. ***Monacanthus heudeloti* Hollard.**

Altures heudeloti, Hollard, Ann. Sciences Nat. IV, 1855, p. 13, Senegal.

Monacanthus heudeloti, Günther, Catalogue Fishes VIII, p. 251; Rochebrune, Faune Sénégalamb., l.c. p. 177; Pellegrin, Ann. Monaco VI, 4, p. 86, Senegal, Angola.

556. ***Monacanthus scriptus* Osbeek.**

Monacanthus scriptus, Günther, Catalogue Fishes VIII, p. 252; Rochebrune, Faune Sénégalamb., l.c. p. 177; Osorio, Jorn. Lisboa (II) V, p. 200, Capeverde.

557. ***Aluterus fuscus* Fischer.**

Monacanthus (Aluterus) fuscus, Fischer, Jahrb. Hamb. Wiss. Anst., 1885, p. 75, Cameroon.

558. ***Aluterus blankerti* nov. spec.**

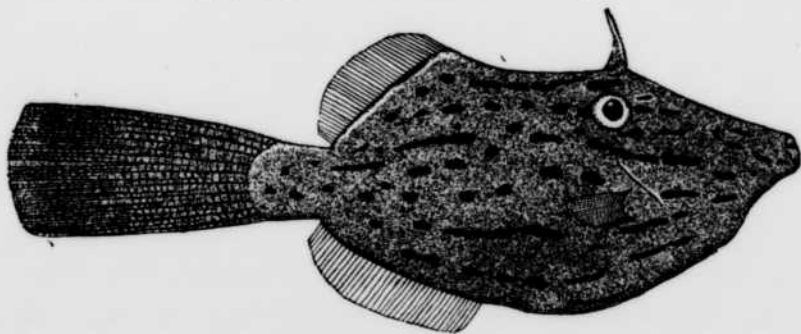


Fig. 64. *Aluterus blankerti* nov. spec. $\times \frac{1}{2}$.

Collection-Vermeulen: Cape Blanco.

D. I, 36—37; A. 39.

Head $3\frac{2}{9}$ in body ($4\frac{2}{3}$ in total). Depth at origin of soft vertical fins $2+—2\frac{3}{7}$ ($3\frac{1}{5}—3\frac{5}{9}$). Depth at pelvis $2\frac{1}{3}$ ($3\frac{1}{5}—3\frac{2}{5}$). Depth midway between spine and soft dorsal 4 in total. Orbit 5 i. h. Lower jaw little projecting. Gill-opening $2\frac{2}{3}—3$ i. h. Profile of snout concave, back reaching its highest point at the insertion of soft dorsal, which is situated on a rather high crest. Dorsal spine slender with 4 series of barbs. Caudal $2\frac{2}{5}$ ($3—3\frac{1}{3}$ in total). Pectoral equal to gill-opening.

Colour: rusty brown with dark longitudinal lines, partly broken up in spots more backwards on body. Caudal black.

Length 18—21 cM.

Nomen vulgare: *Cajo de Altura*.

Named after Miss Mary Blankert.

559. *Balistes maculatus* Bloch.

Balistes maculatus, Günther, Catalogue Fishes VIII, p. 213.

560. *Balistes forcipatus* Gmel.

Balistes liberiensis, Steind., Sitzb. Wien, LV, 1867, p. 525, Taf. III.

„ *forcipatus*, Steind., Denkschr. Wien, XLIV, p. 50, Senegal; Osorio, Jorn. Lisboa (II) V, p. 200, Capeverde-Angola; Rochebrune, Faune Sénégal., l. c. p. 176, Senegal.

Collection-Vermeulen: Coast Senegal.

D. III, 26—27; A. 24—25.

Dorsal spine large, one half of depth between the insertions of vertical fins.

Colour: a distinct black blotch close to the roots of upper caudal rays.

Length 36—37 cM.

Nomen vulgare: *Cajo canario*.

Both sides of Atlantic.

561. *Balistes capriscus* Gmel.

Balistes capriscus, Günther, Catalogue Fishes VIII, p. 217; Hollard, Ann. Sc. Nat., 1854, I, p. 309; Osorio, Jorn. Lisboa (II) V, p. 200, Angola.

„ *caprinus*, Valenciennes, Iles Canaries, p. 94, pl. XVI.

„ *buniva*, Osorio, Jorn. Lisboa (II) II, p. 135, St. Thomé.

Both sides of Atlantic.

562. *Balistes aculeatus* L.

Balistes aculeatus, Günther, Catalogue Fishes VIII, p. 223;
Rochebrune, Faune Sénégalamb., l. c. p. 176.

OSTRACIONTIDAE.

563. *Ostracion quadricornis* L.

Ostracion quadricornis, Bleeker, Poissons Guinée, l. c. p. 20;
Rochebrune, Faune Sénégalamb., l. c.
p. 177; Osorio, Jorn. Lisboa (II) V,
p. 200, Gulf of Guinea, Angola.
var. *notacanthus*, Bleeker, Ned. Tijdschr. Dierk. II, p. 298, Guinea.
Both sides of Atlantic.

TETRODONTIDAE.

564. *Tetrodon guttifer* Benn.

Tetrodon guttifer, Günther, Catalogue Fishes VIII, p. 272;
Steind., Notes Leyden Mus. XVI, p. 90, Liberia; Rochebrune,
Faune Sénégalamb., l. c. p. 178; Fischer, Jahrb. Hamb. Wiss.
Anst., 1885, p. 76; Osorio, Jorn. Lisboa (II) V, Bissau, Angola;
Pietschmann, Jahrb. Nassauer Ver. Naturk., LXVI, 1913, p. 185,
Cameroon.

Collection-Vermeulen: Cape Blanco.

D. 10; A. 9; P. 18.

Head $3\frac{2}{5}$ (4⁺). Eye $5\frac{1}{2}$. Interorbital 2⁺ in head. Snout equal to interorbital. Eye placed midway between tip of snout and branchial opening. Granules of the shields forming longitudinal, partly confluent lines. Height of dorsal = anal, $1\frac{2}{3}$ in head. Caudal $1\frac{1}{5}$ in distance to front of dorsal.

Colour: Bluish brown above, belly pale. A conspicuous broad crossbar beneath eye with a pale area of the same width behind it. Base of pectoral black. Body with longitudinal series of pale blue spots of a size of the pupil, many of which have a dark centre. Caudal brown, the upper and lower rays darker, the whole fin ornated with white circular spots. Dorsal and anal pale.

Length: 53—54 cm.

Nomen vulgare: *Temboril de Tierra*.

565. **Tetrodon lagocephalus L.**

Tetrodon lagocephalus, Günther, Catalogue Fishes VIII, p. 273;
Osorio, Jorn. Lisboa (II) II, p. 59, Angola.
Collection-Vermeulen: Baie de l'Ouest.

566. **Tetrodon laevigatus L.**

Tetrodon laevigatus, Günther, Catalogue Fishes VIII, p. 274;
Steind., Notes Leyden Mus. XVI, p. 90, Liberia; Rochebrune,
Faune Sénégal., l. c. p. 178; Osorio, Jorn. Lisboa (II) V, p. 200,
Angola; Pellegrin, Ann. Monaco VI, 4, p. 86, Mauretania.
Both coasts of Atlantic.

567. **Tetrodon sceleratus L. Gm.**

Tetrodon sceleratus, Günther, Catalogue Fishes VIII, p. 276;
Rochebrune, Faune Sénégal., l. c. p. 178.
Indopacific species.

568. **Tetrodon spengleri Bl.**

Tetrodon spengleri, Günther, Catalogue Fishes VIII, p. 284;
Rochebrune, Faune Sénégal., l. c. p. 178; Osorio, Jorn. Lisboa
(II) V, p. 200, Angola, St. Thomé; Vinciguerra, Atti Soc. Ital.
Sc. Nat. XXXIV, p. 334, Canaries.
Both sides of Atlantic.

569. **Tetrodon stellatus Blkr.**

Tetrodon stellatus, Günther, Catalogue Fishes VIII, p. 295;
Rochebrune, Faune Sénégal., l. c. p. 179.

570. **Tetrodon lineatus L.**

Tetrodon fahaca, Steind., Sitzb. Wien, LXI, 1870, p. 572, Senegal.

571. **Tetrodon pustulatus Murray.**

Tetrodon pustulatus, Günther, Catalogue Fishes VIII, p. 291;
Pellegrin, Ann. Monaco VI, 4, p. 87, Gabon.

572. *Tetrodon rostratus* Bl.

Tetrodon rostratus, Günther, Catalogue Fishes VIII, p. 303; Vinciguerra, Atti Soc. Ital. Sc. Nat. XXXIV, p. 334, Canaries. Both sides of Atlantic.

DIODONTIDAE.**573. *Chilomycterus geometricus* Bl.**

Chilomycterus geometricus, (var. z. Gnthr.), Osorio, Jorn. Lisboa (II) II, p. 137, St. Thomé.

574. *Chilomycterus antennatus* Cuv.

Chilomycterus antennatus, Günther, Catalogue Fishes VIII, p. 311; Osorio, Jorn. Lisboa (II) V, p. 200, Fernando Po. Both sides of Atlantic.

575. *Chilomycterus reticulatus* L.

Chilomycterus reticulatus, Günther, Catalogue Fisher VIII, p. 313; Pietschmann, Jahrb. Nass. Ver. Naturk. LXVI, 1913, p. 184, Cameroon; Pellegrin, Ann. Monaco VI, 4, p. 87, Angola.

Collection-Vermeulen: Cape Blanco.

No ossifications on back of tail. Width of mouth $2\frac{1}{3}$ in head. Interorbital $1\frac{1}{2}$ -. Eye $3\frac{1}{2}$ in interorbital. Base of dorsal $1\frac{1}{2}$ in distance to base of caudal. 19 rays in pectoral.

Colour: three dark crossbars, one under eye, joining its mate at the chin; one between eye and pectoral; one beneath lower-posterior margin of pectoral. Rows of spots on fins.

Nomen vulgare: *Temboril di Altura*.

Length 26—27 cm.

576. *Diodon hystrix* L.

Diodon hystrix, Rochebrune, Faune Sénégalamb., l. c. p. 179; Osorio, Jorn. Lisboa (II) V, p. 200, St. Thomé. Both sides of Atlantic.

577. *Orthagoriscus truncatus* Flem.

Orthagoriscus truncatus, Günther, Catalogue Fishes VIII, p. 319; Rochebrune, Faune Sénégalamb., l. c. p. 180.

List of new Genera and Species

described in this paper.

<i>Torpedo mackayana</i>	Metzelaar	West Africa.
<i>Muraena dinocephala</i>	"	"
<i>Syngnathus dunckeri</i>	"	West India.
<i>Melanorhinus boekei</i>	"	"
<i>Serranus dewegeri</i>	"	"
<i>Umbrina gracilicirrhus</i>	"	"
<i>Pristipoma boschmae</i>	"	"
<i>Doratonotus boekei</i>	"	"
<i>Solea vermeuleni</i>	"	West Africa.
<i>Gobius curacao</i>	"	West India.
<i>Gobius senegambiensis</i>	"	West Africa.
<i>Evermannichthys spongicola</i>	"	West India.
<i>Xenogobius weberi</i>	"	"
<i>Scorpaena albofasciata</i>	"	"
<i>Scorpaena tredecimspinoso</i>	"	"
<i>Callionymus boekei</i>	"	"
<i>Callionymus sancti eustatii</i>	"	"
<i>Gobiesox sanctimartini</i>	"	"
<i>Blennius niger</i>	"	West Africa.
<i>Blennius rioudourensis</i>	"	"
<i>Brannerella sluiteri</i>	"	West India.
<i>Histioclinus veliger</i>	"	"
<i>Acanthemblemaria spinosa</i>	"	"
<i>Aluterus blankerti</i>	"	West Africa.
<i>Tetrodon eulepidotus</i>	"	West India.
<i>Chilomycterus briareos</i>	"	"

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General Index of Families, Species and Varieties

(without the synonyms).

	pag.		pag.
abildgaardi, Sparisoma	412	altavela, Pteroplatea	200
Aboma sp.	438	amblyrhynchus, Caranx	420
Acanthuridae	94, 256	americanus, Odontaspis	189
acarne, Pagellus	252	americanus, Polyprion	230
aculeatus, Balistes	297	amia, Lichia	267
acuminatus, Eques	73	Ammodytidae	221
acuminatus, Ophichthys	46	amphioxys, Pseudomonacanthus	166
acus, Belone	31	analis, Lutjanus	65
acus, Syngnathus	216	analis, Pomacentrus	98
cuticeps, Chromis	257	anchovia, Sardinella	40
acutus, Carcharias	486	angolensis, Kneria	215
acutus, Exocoetus	220	anguillaris, Clarias	205
adscensionis, Epinephelus	47, 232	Anguillidae	14, 207
adscensionis, Holocentrus	42, 228	angustifrons, Genyatremus	244
aeneum, Diagramma	244	annularis, Sargus	248
aeneus, Epinephelus	232	Antennariidae	160, 293
afer, Epinephelus	49, 233	antennatus, Chilomycterus	299
affinis, Auchenopterus	456	antiquorum, Hippocampus	217
affinis, Exocoetus	35	antiquorum, Pristis	492
afra, Muraena	211	aper, Capros	254
africana, Drepane punctata	256	apodus, Lutjanus	62
africana, Eleotris	284	aquila, Myliobatis	200
africana, Pellona	204	aquila, Sciaena	238
africana, Squatina	191	aramaca, Hemirhombus	276
africanus, Caranx	266	arcuatus, Pomacanthus	92
afer, Epinephelus	233	ardeola, Belone	29, 218
agennes, Lutjanus	236	area, Atherina	37
alalonga, Thynnus	272	arenatus, Priacanthus	235
albesca, Uranoscopus	288	arenatus, Rhypticus	234
albifimbria, Scorpaena	144	asperrimus, Urogymnus	198
albofasciata, Scorpaena	145	aspilus, Arnoglossus	276
Albulidae	8, 202	asterias, Raja	195
album, Haemulon	76	Atherina, sp.	38
Alepidosauridae	214	Atherinidae	36, 221
alexandrinus, Caranx	265	atlantica, Coris	264
alexandrinus, Epinephelus	231	atlanticus, Cirrhites	236

	pag.		pag.
atlanticus, Lethrinus	249	bimaculatus, Lepadogaster	288
atlanticus, Megalops	202	binotatus, Apogon	60
atlanticus, Rhynchobatus	192	bistrispinus, Rhypticus	57
atlanticus, Salaria	158, 292	bivittatus, PlatyGLOSSUS	105
atlanticus, Saurus	214	blainvillii, Acanthias	190
atricauda, Serranus	234	blankerti, Aluteres	295
augusti, Muraena	210	Blenniidae	152, 288
Aulostomatidae	26, 215	bocagei, Sphyræna	226
auratus, Mugil	223	boekei, Callionymus	149
auratus, Pagrus	251	boekei, Doratonatus	107
aurea, Clupea	203	boekei, Melanorhinus	38
auriga, Pagrus	250	bogaraveo, Pagellus	253
aurita, Sardinella	203	bonaci, Epinephelus	50
aurofrenatum, Sparisoma	112	bonariense, Haemulon	77
aurolineatum, Haemulon	81	boops, Box	246
aurorubens, Lutjanus	68	boschmae, Pristipoma	83
aya, Lutjanus	64	bosci, Cyphosus	45, 229
bagre, Felichthys	13	boulengeri, Parakuhlia	229
bahianus, Acanthurus	95	bouvieri, Blennius	289
bahiensis, Exocoetus	35, 221	bovina, Myliobatis	200
bailloni, Crenilabrus	260	boyeri, Atherina	221
baionado, Calamus	87	brachiale, Sparisoma	114
balnearica, Congromuraena	207	brachygnathus, Otolithus	240
Balistidae	162, 294	Bramidae	275
barbata, Brotula	293	brasilianus, Gerres	76
barbatum, Ophidium	217	brasiliensis, Brannerella	155
barbatus, Mullus	253	brasiliensis, Hemirhamphus	34, 219
bartholomaei, Caranx	121	brasiliensis, Isistius	191
Batrachidae	159, 292	brasiliensis, Mugil	39
bellotii, Pagellus	253	breviceps, Mugil	222
bellotii, Sargus	249	brevifile, Sicydium	284
benoitii, Scopeus	214	briareos, Chilomycterus	173
beninensis, Batrachus	293	brownii, Engraulis	13
bennettii, Pristipoma	242	buccanella, Lutjanus	63
bennettii, Psettodes	275	bucciferus, Clinus	154
bennetti, Trygon	199	budegassa, Lophius	293
bergii, Scorpaena	143	büttikoferi, Ophichthys	209
bertheloti, Schedophilus	227	Cabrilla, Serranus	234
Berycidae	42, 228	cadmanni, Lepidotrigla	286
beryllinus, Cryptotomus	110	caeruleostictus, Pagrus	251
bicaudalis, Ostracion	167	caeruleus, Acanthurus	94
bicolor, Caranx	265	calabarius, Hemirhamphus	219
bicolor, Heliastes	259	calamus, Calamus	86
bicuspis, Hippocampus	217	Callionymidae	140
bifasciata, Julis	107	cameronensis, Sardinella	204
bilobus, Gerres	240	campylacanthus, Antennarius	
bimaculatus, Clinus	153	commersonii	294
bimaculatus, Hemichromis	257	canariensis, Blennius	290

	pag.		pag.
canariensis, Cynoglossus	280	cirrhus, Umbrina	237
canariensis, Dentex	245	Citharichthys species	132
canariensis, Umbrina cirrhosa	237	clavata, Raja	195
canicula, Scyllium	185	Glupeidae	9, 202
caninus, Epinephelus	232	clupeola, Sardinella	41
canis, Galeus	188	coeruleostictus, Pagrus	251
cantus, Onychognathus	258	coeruleus, Scarus	117
capellonis, Arius	206	colias, Scomber	271
capistratus, Chaetodon	91	coloratum, Aulostoma	215
capito, Mugil	223	columnae, Rhinobatus	194
capricornus, Balistes	162, 296	compressus, Myroconger	210
Caproidae	89, 254	concolor, Abudedefduf	99
capros, Antigonina	89, 254	congica, Poecilothrissa	204
Carangidae	117, 263	coriaceus, Rhypticus	57
carangus, Caranx	265	coroides, Umbrina	71
carbonarium, Haemulon	78	coronatus, Epinephelus	46
Carchariidae	186	coruscus, Holocentrus	43
caribaea, Belone	31, 218	corvinaeforme, Pristipoma	85
catenata, Echidna	21	Goryphaenidae	127, 274
caudatus, Lepidopus	273	cretense, Sparisoma	262
cavalla, Cybium	126, 273	erinigerus, Syngnathus	28
cavifrons, Diagramma	244	cristatus, Blennius	158, 289
cayorum, Syngnathus	27	croicensis, Scarus	116
Centrarchidae	229	crotaphus, Platygllossus	105
Centriscidae	216	cruentatus, Priacanthus	58, 235
centrodontus, Pagellus	252	crumenophthalmus, Caranx	119, 264
cephalus, Mugil	222	cryptacanthus, Mastacembelus	293
cervinus, Sargus	248	cryptocheilus, Mugil	223
Chaetodontidae	90, 254	cultratus, Xyrichtys	262
chaperi, Paraclinus	156	cunninghami, Dentex	245
chelo, Mugil	224	curacao, Gobius	136
chirophthalmus, Solea	279	curema, Mugil	38, 223
chirurgus, Acanthurus	256	curvidens, Myxus	40, 224
choram, Belone	218	cuvieri, Trachurus	263
chromis, Heliastes	259	cycnocephalus, Platygllossus	104
chrysargyreus, Haemulon	81	Cyphosidae	44, 229
chrysops, Caulolatilus	70	Cyprinodontidae	24, 215
chrysopterus, Sparisoma	113	cyprinoides, Gobius	135
chrysos, Caranx	121, 265	Dactylopteridae	147, 287
chrysurus, Abudedefduf	101, 259	dactylopterus, Sebastes	284
chrysurus, Lutjanus	68	Dactyloscopidae	147
chrysurus, Micropteryx	123, 267	decadactylus, Beryx	228
Cichlidae	256	decadactylus, Galeoides	225
ciliaris, Holacanthus	94	dentatus, Lutjanus	69, 236
ciliatus, Monacanthus	164	dentex, Caranx	264
cinereus, Gerres	75	dewegeri, Serranus	52
cinereus, Notidanus	185	didactylus, Batrachus	292
cirratus, Ginglymostoma	5, 186	dinocephala, Muraena	211

	pag.		pag.
Diodontidae	172, 299	furnieri, Micropogon	71
dispilurus, Centropristis	56	fuscus, Aluterus	295
distinctum, Sparisoma	113	fuscus, Apsilus	230
djeddensis, Rhynchobatus	192	fuscus, Pomacentrus	96
draco, Trachinus	287	gabonica, Pellona	205
ductor, Naucrates	273	gabonicus, Periophthalmus	283
dumerilii, Eleotris	283	Gadidae	228
dumerilii, Mugil	224	galerita, Blennius	289
dumerilii, Seriola	267	garnoti, Platyglossus	104
dunckeri, Syngnathus	28	geometricus, Chilomycterus	299
eba, Sardinella	203	Gerridae	74, 240
Echeneidae	141, 284	gibbiceps, Chrysophrys	252
ehrenbergi, Pagrus	251	gibbifrons, Exocoetus	36
elegans, Platyglossus	106	gibbus, Antennarius	160
elegans, Cyphosus	44	gigas, Epinephelus	232
eliminensis, Batrachus	292	giorna, Cephaloptera	201
Elopidae	9, 202	gladius, Xiphias	128, 274
enclasiolus, Engraulis	202	glauca, Lichia	268
endecacanthus, Lutjanus	236	glaucobraenum, Gobius	137
epipercus, Sciaena	238	glaucus, Carcharias	187
equisetis, Coryphaena	128, 275	glaucus, Trachinotus	124
erumei, Psettodes	275	glossodonta, Albula	202
erythrinus, Pagellus	252	Gobiesocidae	151, 288
erythronotus, Periophthalmus	283	Gobiidae	134, 281
esonue, Epinephelus	233	goreensis, Blennius	288
eulepidotus, Tetradon	170	goreensis, Box	247
eutactus, Lutjanus	236	goreensis, Cynoglossus	281
evermanni, Scarus	116	goreensis, Ephippus	255
evolans, Exocoetus	220	goreensis, Epinephelus	231
faber, Ephippus	90, 255	goreensis, Selene	266
faber, Zeus	275	goreensis, Trachinotus	270
falciformis, Carcharias	187	gouanii, Lepidogaster	288
falcipinnis, Mugil	223	grabata, Taeniura	199
fasciatus, Hemichromis	257	gracilicirrus, Umbrina	72
fasciatus, Sargus	248	gracilis, Belone	218
felis, Felichthys	13	gracilis, Centriscus	216
ferox, Alepidosaurus	214	gracilis, Saurida	23
ferox, Muraenesox	208	grandicornis, Scorpaena	142
fiatola, Stromateus	227	grandisquamis, Mugil	222
filamentosus, Aulopus	214	granulatus, Arius	206
filosus, Dentex	245	granulatus, Rhinobatus	194
Fistulariidae	26, 215	granulosus, Centrophorus	190
flavescens, Sparisoma	114, 262	griseus, Lutjanus	61, 235
flavolineatum, Haemulon	80	griseus, Saurus	213
forcepatus, Balistes	296	gronovii, Nomeus	226
fulgens, Lutjanus	236	gruveli, Platycephalus	286
funbris, Muraena	18	guacamaia, Pseudoscarus	117, 262
furcifer, Paranthias	52	guachancho, Sphyræna	41, 226

	pag.		pag.
guavina, Eleotris	283	inscriptus, Achirus	133
guineënsis, Coris	261	insidiator, Smaris	246
guineënsis, Haligenes	257	intermedius, Saurus	21, 214
guineënsis, Hemirhombus	277	interstitialis, Epinephelus	51
guineënsis, Lutjanus	236	isodon, Carcharias	187
guineënsis, Ophichthys	209	jacobaeus, Caranx	263
guttatus, Epinephelus	48, 230	jacobus, Myripristis	44, 229
guttatus, Onos	228	javanica, Rhinoptera	201
guttifer, Tetrodon	297	jello, Sphyræna	226
guttulatus, Hippocampus	217	jentinki, Pelmatochromis	256
halavi, Rhinobatus	194	jocu, Lutjanus	62
hamyi, Pomacentrus	258	jozo, Gobius	281
haplomystax, Sparisoma	111	jubelini, Pristipoma	241
harringtonensis, Atherina	37	julis, Coris	261
harperi, Tetrodon	170	juillerati, Doryichthys	217
hasta, Pristipoma	241	kaupi, Syngnathus	217
hastata, Trygon	7	Kneriidae	215
hastatus, Holocentrus	228	koelreuteri, Periophthalmus	282
havannensis, Ophichthys	16, 209	kühlii, Sebastes	285
hebetans, Torpedo	196	labes, Mugil	224
helenæ, Muraena	210	labrax, Morone	230
hepatus, Acanthurus	95	Labridae	102, 259
hepsetus, Atherina	222	lacerta, Elops	202
hermani, Abudedefduf	259	laevigatus, Tetrodon	298
herminier, Clinus	153	laevis, Mustelus	5, 188
heudeloti, Arius	205	laevis, Scorpaena	286
heudeloti, Chromis	258	lagocephalus, Tetrodon	168, 298
heudeloti, Monacanthus	295	lamia, Carcharias	187
hexophthalma, Solea	279	Lamnidae	189
harengulus, Eucinostomus	74	lamprotaenia, Jenkinsia	9
hians, Belone	33, 218	lanceolatus, Eques	73
hippos, Caranx	122, 265	lascaris, Solea	278
hippurus, Coryphaena	127, 274	laticeps, Atherina	36
hirundo, Trigla	86	latifrons, Genyatremus	244
Histiophoridae	274	latirostris, Aetobatis	200
Histrio, Antennarius	294	laticutatus, Arius	205
hoefleri, Chaetodon	255	lecomtii, Muraena	212
hoefleri, Abudedefduf	259	leeuweni, Zygaena	189
hoefleri, Pseudoscarus	262	lefroyi, Ulaema	74
hoefleri, Mugil	224	Leptocephalus	14
horkelii, Rhinobatus	7	lepturus, Trichiurus	373
humboldti, Scopelus	214	leucas, Carcharias	187
humeralis, Sardinella	11	leucostictus, Pomacentrus	99, 258
hupferi, Coris	261	leucurus, Psenes	226
hupferi, Sphyræna	226	liberiensis, Batrachus	292
hypselopterus, Mugil	223	limbatus, Carcharias	188
hystrix, Diodon	172, 299	lineata, Trigla	286
Icosteidae	227	lineatum, Pristipoma	85

	pag.		pag.
lineatus, Achirus	133	margarita, Trygon	199
lineatus, Cantharus	246	margaritaceus, Salaria	158
lineatus, Exocoetus	220	marginata, Rhinoptera	201
lineatus, Tetodon	298	marginatus, Caranx	265
lineolatus, Trachinus	288	marginatus, Chromis	96
lippei, Pagellus	253	marginatus, Conger	207
Lobotidae	229	marginatus, Symphurus	134
longissimus, Heteroconger	207	marina, Trygon	198
longum, Gobiosoma	139	marmorata, Torpedo	198
Lophiidae	293	marmoratus, Rivulus	24
lubberti, Rhynchobatus	193	marmoratus, Tetodon	169
lunatus, Rhomboidichthys	130, 277	maroccanus, Dentex	245
luridus, Abudedefduf	259	martinicensis, Xyrichthys	109
lutea, Solea	279	martinicus, Upeneus	89
mackayana, Torpedo	197	Mastacembelidae	293
macrocephalus, Chromis	257	mauretanicus, Panturichthys	209
macrognathus, Otolithus	240	maximus, Lachnolaimus	102
macrolepis, Diagramma	244	m'baoensis, Solea senegalensis	278
macrophthalmus, Sardinella	12	mediterranea, Mora	228
macrophthalmus, Aprion	69	mediterraneum, Diagramma	243
macrophthalmus, Dentex	245	mediterraneus Caranx trachurus	263
macrophthalmum, Haemulon	243	mediterraneus, Phycis	228
macrophthalmum, Pristipoma	243	meeki, Chromis	258
macrops, Caranx	265	megalophthalmus, Lutjanus	67
macrops, Conger	207	melanochira, Solea vulgaris	278
macrops, Diagrammella	244	melanura, Oblata	247
Macruridae	227	melanurum, Haemulon	79
macrurus, Heterenchelys	207	melanurus, Smaris	246
macrurus, Ophichthys gomesii	17	melanopleura, Chromis	258
maculatum, Cybium	127, 272	melanopterus, Carcharias	188
maculatus, Apogon	59	melanopterus, Gerres	241
maculatus, Aulostomus	26	melanotheron, Serotherodon	258
maculatus, Balistes	296	melanotis, Muraena	210
maculatus, Upeneus	88	mesogaster, Exocoetus	36
maculicauda, Haemulon	83	microchirus, Stromateus	227
maculifer, Rhomboidichthys	130	Microgobius sp.	138
maculipinna, PlatyGLOSSUS	105	microphthalmus, Heterenchelys	207
maculosa, Thalassophryne	160	microstomus, PlatyGLOSSUS	106
maderensis, Gobius	281	micrura, Pteroplatea	8, 199
maderensis, Raja	195	micrurus, Hemirhombus	131
maderensis, Sardinella	204	miliaris, Muraena	19
maderensis, Sebastes	285	miraletus, Raja	195
mahogoni, Lutjanus	67	mixtus, Labrus	260
malleus, Zygaena	189	modesta, Pellonula	204
Malthidae	162	modestus, Xyrichthys	110
maltzani, Eleotris	284	monroviae, Acanthurus	256
maltzani, Lutjanus	236	moorii, Sciaena	238
marchei, Mastacembelus	293	moringa, Muraena	81

	pag.		pag.
Moringua sp.	17	octactis, Gerres	241
morio, Epinephelus	48, 233	octolineatum, Diagramma	244
mormyrus, Pagellus	253	oculatus, Ophichthys	15, 209
mossambicus, Chromis	257	oeur, Mugil	222
mowbrayi, Gobius	137	ophidion, Nerophis	217
Mugilidae	38, 222	orplus, Pagrus	250
Mullidae	88, 253	Ostraciontidae	166, 297
multifasciatum, Gobiosoma	139	ovalis, Lirus	226
Muraena sp.	20	ovatus, Trachinotus	269
Muraenidae	18, 210	pachycephalus, Tetradon	169
Myliobatidae	200	paganellus, Gobius	281
myops Saurus	23, 214	palloni, Acantholabrus	260
narce, Torpedo	196	papilio, Periophthalmus koelreuteri	283
narinari, Aetobatis	200	pardalis, Antennarius	161, 293
nasutus, Nesiarchus	274	pardalis, Monacanthus	294
naucrates, Echeneis	141, 284	pardalis, Ophichthys	209
naucratoides, Echeneis	141	parkii, Arius	206
nebulosus, Otolithus	239	parra, Haemulon	78
nectura, Gymnomuraena	20	parvulus, Dentex	245
nemoptera, Albula	9	paru, Peprilus	42
newtoni, Julis	261	paru, Pomacanthus	92
niger, Blennius	290	pastinaca, Trygon	198
nigra, Sciaena	238	pauciradiatus, Callionymus	149
nigri, Epinephelus	230	pavo, Julis	261
nigri, Gerres	241	pectinatus, Pristis	7, 192
nigricans, Enchelycore	213	pedatipinnis, Clinus	292
nigripinnis, Sciaena	239	pelagicus, Syngnathus	216
nigrita, Sciaena	239	pelamys, Thynnus	272
nigrodigitatus, Chrysichthys	205	peli, Larimus	240
nigromaculata, Synaptura		peli, Muraena	212
punctatissima	280	peli, Rhinoptera	201
nigrostrigatus, Mugil	224	perniger, Eleotris	134
nigrum, Rhachicentrum	271	perrotteti, Pristipoma	243
niloticus, Chromis	257	perrotteti, Pristis	192
nitida, Julis	106	phoebe, Serranus	53
nobilis, Conodon	86	picuda, Sphyræna	41
nobilis, Polymixia	229	picudilla, Sphyræna	41
Notidanidae	185	pigmentarius, Apogon	60
nuchipinnis, Clinus	154, 292	pilchardus, Sardina	203
nudus, Gobiesox	151	pinnatibarbus, Exocoetus	220
obscura, Trigla	286	pisonis, Eleotris	283
obscurus, Carcharias	187	Platycephalidae	286
occidentalis, Uranoscopus	288	Pleuronectidae	275
oceanicus, Gobius	137	plumieri, Haemulon	80
ocellata, Muraena	19	plumieri, Malacanthus	70
ocellata, Solea	278	plumieri, Scorpaena	142
ocellatus, Chaetodon	90	podas, Rhomboidichthys	277
ocellatus, Rhomboidichthys	129	poeyi, Dactyloscopus	148

	pag.		pag.
Polynemidae	40, 224	Rhinobatidae	7, 192
Pomacentridae	96, 258	rhombeus, Gerres	75
porcus, Scorpaena	285	rhomboides, Trachinotus	125
prayensis, Upeneus	253	rhonchus, Caranx	264
presbyter, Atherina	292	Rhypticus sp.	58
pretiosus, Thyrsites	274	rimator, Haemulon	81
Pristidae	7, 192	ringens, Balistes	163
Pristipomatidae	76, 241	riodourensis, Blennius	291
productus, Mugil	224	riverendi, Cyprinodon	25
prometheus, Thyrsites	274	robertsi, Syngnathus	27
pseudogula Eucinostomus	74	rochebrunei, Cephaloptera	201
psittacus, Tetrodon	171	rogeri, Pristipoma	241
psittacus, Xyrichthys	109	ronchus, Umbrina	237
puellaris, Cossyphus	103	rondeleti, Sargus	248
puertoricensis, Clinus	152	rondeletii, Carcharodon	190
pulchellus, Mugil	224	rondeleti, Exocoetus	221
punctata, Aluterus	166	roseus, Cryptotomus	110
punctata, Morone	230	rosipes, Xyrichthys	108
punctatissima, Synaptura	280	rostellatus, Ophichthys	208
punctatus, Caranx	118, 263	rostratus, Tetrodon	171, 299
punctatus, Epinephelus	46, 231	rousseaui, Syngnathus	27
punctatus, Eques	73	rubellio, Scorpaena	286
punctatus, Hoplunnis	213	ruber, Caranx	120
punctatus, Myrophis	208	ruber, Epinephelus	51, 233
punctatus, Prionotus	147	rudis, Trygon	199
punctulatus, Hippocampus	28	rufus, Cossyphus	103
punctulatus, Scarus	115	sacer, Anthias	234
puntazzo, Sargus	249	saliens, Chorinemus	268
pusillus, Spinax	190	saliens, Mugil	223
pustulatus, Tetrodon	298	salpa, Box	246
quadricornis, Ostracion	167, 297	saltator, Temnodon	125, 269
quadrifilis, Polynemus	225	sanctae helenae, Caranx	119
quinqarius, Pentanemus	224	sancti eustatii, Callionymus	150
radialis, Serranus	54	sancti martini, Gobiesox	151
radians, Sparisoma	111, 262	sanguinolentus, Blennius	289
radiatus, Platyglossus	104	saponaceus, Rhypticus	56, 234
radiatus, Trachinus	287	sarda, Pelamys	272
raii, Brama	275	sardina, Sardinella	11
Rajidae	195	saurus, Chorinemus	118
raphidoma, Belone	32, 218	saurus, Elops	3, 202
rasus, Rhinobatus	194	saurus, Saurus	22
regale, Cybium	126	saurus, Scombresox	219
remora, Echeneis	142, 284	Saurus sp.	23
reticulatus, Chilomycterus	299	sauvagei, Sciaena	238
reticulatus, Labrus	259	saxatilis, Abudedefduf	100, 258
rex, Apogon	235	scaber, Antennarius	161
Rhachicentridae	271	scaber, Uranoscopus	288
Rhinidae	191	Scaridae	110, 262

	pag.		pag.
sceleratus, Tetrodon	298	sphyraenoides, Paralepis	214
schlegeli, Gobius	281	Sphyrnidae	189
schlegeli, Hemirhamphus	220	spilargyreus, Haplochilus	215
schlegeli, Mugil	222	spilauchen, Haplochilus	215
schoenleinii, Platyrrhina	195	spilopterus, Citharichthys	133, 276
Sciaenidae	71, 237	Spinacidae	190
sciurus, Haemulon	79	spinarella, Dactylopterus	287
Sclerorhynchus	227	spinosa, Acanthemblemaria	159
scolopax, Centriscus	216	spinosissima, Trygon	198
scomber, Scomber	271	spinosus, Echinorhinus	191
Scombresocidae	29, 217	splendens, Beryx	229
Scombridae	125, 271	spongicola, Evermannichthys	139
Scopelidae	21, 213	squatina, Squatina	191
Scorpaenidae	142, 284	stampfli, Hemirhombus	277
Scorpididae	254	steindachneri, Haemulon	79
scriba, Serranus	234	stellare, Scyllium	185
scriptus, Monacanthus	295	stellatum, Haemulon	82
scrofa, Cossyphus	261	stellatus, Apogon	60
scrofa, Scorpaena	285	stellatus, Epinephelus	47
Scyllidae	185	stellatus, Tetrodon	298
sebae, Psettus	254	striatus, Chaetodon	91, 254
sedentarius, Chaetodon	90	striatus, Epinephelus	47
semicinctus, Gillellus	147	Stromateidae	42, 226
semicinctus, Ophichthys	209	stübeli, Girella	247
senegalensis, Belone	219	suillum, Pristipoma	242
senegalensis, Cynoglossus	280	surinamense, Pristipoma	84
senegalensis, Otolithus	239	surinamensis, Batrachus	159
senegalensis, Rhombus	276	surinamensis, Lobotes	229
senegalensis, Sciaena	237	surmuletus, Mullus	253
senegalensis, Scorpaena	285	sutor, Caranx	266
senegalensis, Solea	278	svensonii, Chilorhinus	14
senegallus, Caranx	264	synagris, Lutjanus	66
senegambiensis, Gobius	282	Syngnathidae	27, 216
serpens, Gempylus	274	synodus, Saurus	22
serpens, Ophichthys	208	tabacaria, Fistularia	26, 216
Serranidae	46, 230	tabacarius, Serranus	54
setifer, Monacanthus	164, 294	taeniops, Epinephelus	231
setipinnis, Selene	123, 266	taeniopterus, Scarus	115
siculus, Ammodytes	221	tajasica, Gobius	282
Siluridae	13, 205	taurus, Abudedefduf	101
simonyi, Aphanopus	273	telescopium, Pomatomus	235
sluiteri, Brannerella	155	tentacularis, Blennius	289
smaragdus, Eleotris	134	teraoides, Trachinotus	270
soporator, Gobius	135, 281	terraenovae, Carcharias	186
spallanzani, Lamna	189	Tetrodontidae	168, 297
Sparidae	86, 245	thompsoni, Gobius	137
spengleri, Tetrodon	169, 298	thrissa, Opisthonema	12
Sphyraenidae	41, 225	thunnina, Thynnus	272

	pag.		pag.
tigrinus, Galeocерdo	188	vandepolli, Poecilia	25
tigrinus, Serranus	53	velifer, Xiphias	274
tigris, Antennarius scaber	161	veliger, Histioelinus	157
timucu, Belone	30	vermeuleni, Solea	279
Torpedinidae	196	vespertilio, Malthe	162
tortugae, Gobius	136	vetula, Balistes	163
Trachinidae	287	vetula, Scarus	116
trachura, Belone	217	vexillarius, Holocentrus	44
trachurus, Trachurus	263	vicina, Muraena	211
tredecimspinosus, Scorpaena	146	villosa, Fistularia	215
tredecimspinosus, Cossyphus	260	vinciguerrae, Exocoetus	34
Trichiuridae	273	vipera, Trachinus	287
trichodon, Mugil	39	virginicum, Pristipoma	85
tricolor, Holacanthus	93	virginicus, Polynemus	40
tridigitatus, Dactyloscopus	148	viride, Sparisoma	113
Triglidae	147, 286	viridense, Pristipoma	242
triglodes, Blennius	289	viridensis, Myripristis	229
trigonus, Ostracion	167	vittata, Eleotris	283
triophthalma, Solea	279	vittata, Gymnomuraena	213
triquetus, Ostracion	166	vittatus, Hemirhamphus	219
triserialis, Ophichthys	208	vivanus, Lutjanus	64
tritor, Gybium	273	volitans, Dactylopterus	147, 287
truncatus, Orthogoriscus	209	volitans, Exocoetus	221
trutta, Centrolabrus	260	vomer, Selene	123, 266
Trygonidae	8, 198	vomerinus, Salarias	291
tuckeri, Monacanthus	165	vorax, Pellonula	204
tudes, Zygaena	189	vulgaris, Anguilla	207
tumbil, Saurida	24	vulgaris, Belone	218
undecimalis, Centropomus	59	vulgaris, Conger	14, 207
undulata, Muraena	210	vulgaris, Dentex	245
undulata, Raja	195	vulgaris, Merluccius	228
undulatus, Rhinobatus	194	vulgaris, Pagrus	87, 249
unicolor, Muraena	212	vulgaris, Sargus	247
unicolor, Pelamys	272	vulgaris, Solea	277
unicolor, Serranus	55	vulgaris, Sphyræna	225
unicolor, Citharichthys	132	vulpes, Albula	8, 202
unifasciatus, Hemirhamphus	33	vulpes, Alopecias	190
unifasciatus, Neolebias	215	walbeehmi, Carcharias	186
unimaculatus, Sargus	88	webbi, Blennophis	291
Uranoscopidae	288	weberi, Xenogobius	140
ustulata, Scorpaena	285	Xiphiidae	128, 274
uyatus, Acanthias	190	xystrodon, Sparisoma	111
vadigo, Lichia	268	zebra, Maena	246
vaillanti, Pteroplatea	200	Zeidae	275
valida, Umbrina	237	Zoarcidae	293

Addenda et Corrigenda.

- p. 5 **Ginglymostoma cirratum**
behind New York add: Recorded by Osorio from Capeverde.
- p. 19 **Muraena funebris**
Habitat, add: Also from West Africa.
- p. 21 **Saurus intermedius**
Habitat, add: Also from West Africa.
- p. 23 **Saurus saurus**
Habitat, add: Also from West Africa.
- p. 26 **Fistularia tabacaria**
Habitat, add: Also from West Africa.
- p. 29 **Belone ardeola**
Habitat, add: Also from West Africa.
- p. 32 **Belone caribbaea**
Habitat, add: Perhaps also from West Africa.
- p. 33 **Belone hians**
Habitat, add: Also from West Africa.
- p. 34 **Hemirhamphus brasiliensis**
Habitat, add: Also from West Africa.
- p. 35 **Exocoetus bahiensis**
Habitat, add: Also from West Africa.
- p. 39 Above **Mugil curema**, add: **MUGILIDAE.**
Mugil curema
Habitat, add: Also from West Africa.
- p. 43 **Holocentrus adscensionis**
Habitat, add: Also from West Africa.
- p. 44 **Myripristis jacobus**
Habitat, add: West Indies to Brazil, also from West Africa.
- p. 46 **Epinephelus punctatus**
Habitat, add: West Indies to Brazil, also from West Africa.
- p. 47 **Epinephelus guttatus**
Habitat, add: Also from West Africa.
- p. 48 **Epinephelus morio**
Habitat, add: Also from West Africa.
- p. 62 **Lutjanus griseus**
Habitat, add: Perhaps also from West Africa.
- p. 74 At the top, add: **GERRIDAE.**
- p. 101 **Microspathodon chrysurus** should be: **Abudefduf chrysurus**, and add to
Habitat: Both sides of Atlantic.
- p. 118 **Chlorinemus saurus** should be: **Chorinemus saurus.**
- p. 186 **Carcharias walbeemhi** should be: **Carcharias walbeehmi.**
- p. 198 **Trygon hastata** Storer should be: **Trygon marina** Klein.
- p. 261 **Nº. 390. Review** should be: **Review.**
- p. 268 **Chlorinemus saliens** should be: **Chorinemus saliens.**



Stalk-eyed Crustaceans of the Dutch West Indies.

By MARY J. RATHBUN,

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This report contains a list of the Decapoda and Stomatopoda obtained in 1905 by Dr. J. Boeke, while government commissioner for the fisheries and aquatic resources of the Dutch West Indies. Investigations were carried on in the waters about six islands, viz St. Martin, Saba and St. Eustatius, in the northern half of the Windward Islands, and Bonaire, Curaçao and Aruba off the coast of Venezuela. As especial attention was given to the fish fauna, the collection of crustaceans is not a large one.

The conditions under which the specimens were obtained are thus described by Dr. Boeke:

"All the animals were collected in salt water of 1,029—1,030 density. There is no fresh water in any of the islands.

"Curaçao, Bonaire and St. Martin possess several deep lagoons or bays connected with the sea by a narrow canal, or shut off from it by a strand reef. Such are St. Joris Bay at the north side of Curaçao, the *Rifwater*, very shallow, the *Schottegat*, near Willemstad, the *Spanish Water*, *Curaçao Bay* and *Fuik Bay*, all at the south side of Curaçao. At Bonaire, the "lac" is found at the east side of the island and is very shallow, with sandy or muddy bottom.

"The three Windward Islands (St. Martin, Saba and St. Eustatius) are small and the "bays" mentioned on the labels are only curvings of the coast, with sandy or stony bottom, sloping down gradually until deep water is reached. St. Martin however possesses a lagoon, "Simson's Bay lagoon", shut off from the sea by a strand reef. It is very shallow, with sandy or muddy bottom strewn with corals and algæ.

"The specimens were collected chiefly by means of a small dredge, a small beam trawl and small handnets of different sizes and structure".

The collection, although small, contains considerable of interest. The mud crab, *Eurypanopeus depressus*, and the eel-grass shrimp, *Hippolyte zostericola*, which had never before been recorded outside of the Atlantic and Gulf coasts of the United States, were taken by Dr. Boeke, the former at St. Martin, the latter at Bonaire. *Hippolyasmata moorei*, described from Porto Rican waters, and several other shrimps have had their known range extended to the islands off Venezuela. Two new species, *Metapenæus mobilispinis* and *Panopeus boekei* are described below, while among the rare species noted are *Panulirus inermis*, *Axiis gundlachi*, *Glypturus branneri*, *Odontodactylus havanensis* and *Pseudosquilla monodactyla*.

Perhaps the most curious occurrence is that of the Palæmonid shrimp, *Macrobrachium olfersii* (= *Bithynis olfersii*) in the salt-water lagoons of Curaçao and Bonaire. This species is widely distributed in the fresh waters of tropical America both in the West Indian islands and on the mainland. Its presence on islands devoid of streams or lakes suggests its possible accidental introduction into wells or small pools of fresh water and its subsequent adaptation to a marine habitat.

The greater part of the species enumerated below are described in my account of „The Brachyura and Macrura of Porto Rico” in the Bulletin of the United States Fish Commission for 1900, vol. 2 (1901). In the present list, only the original reference to each species is given in most cases.

The snapping shrimps, Crangonidæ (= Alpheidæ) are not included, the specimens having been returned to Dr. Boeke for report by Dr. Coutière.

The first set of specimens including types of new species is deposited in the Museum at Leiden, the second forms part of the collection of the Commission for the investigation of the marine resources of the Dutch West Indies at Amsterdam, while the third set is in the United States National Museum.

ORDER DECAPODA.

FAMILY PENEIDÆ.

Sicyonia lævigata Stimpson.

Sicyonia lævigata, Stimpson, Ann. Lye. Nat. Hist. N. Y., vol. 10, 1871, p. 131.

St. Eustatius: West of Oranjestad, 4 fathoms, sandy bottom, small dredge, 17.VIII.05; 1 specimen.

St. Eustatius: Near Tumble-Down-Dick Bay, 10 fathoms, stony bottom, dredge, 17.IX.05; 1 small specimen.

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 1 small specimen.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 2 specimens (1 ♀ 1 juv.).

Aruba: Lagoon, shallow water, among algæ, 2.VIII.05; 1 ♀.

Aruba: SE. of the Island; 1 fathom, small dredge, 3.VIII.05; 3 small specimens.

Distribution: Charleston, South Carolina, to Colombia.

Sicyonia edwardsii Miers.

Sicyonia Edwardsii, Miers, Ann. Mag. Nat. Hist., ser. 5, vol. 8, 1881, p. 367.

St. Eustatius: Jenkins Bay, 6 fathoms, sandy & stony, dredge, 22.VIII.05; 2 specimens.

Distribution: Florida to Brazil.

Peneus brasiliensis Latreille.

Peneus brasiliensis, Latreille, Nouv. Dict. Hist. Nat., vol. 25, 1817, p. 156.

St. Eustatius: NW. of Jenkins Bay, dredged at 30 fath., 15.VIII.05; 1 juv.

St. Eustatius: Tumble-Down-Dick Bay, 40 fathoms, sandy bottom, 17.IX.05; small beam trawl, 2 juv.

Curaçao: Rifwater (Lagoon), shallow water ($\frac{1}{4}$ fathom), small beam trawl, 3.III.05; 1 ♂.

Curaçao: Rifwater, shallow water ($\frac{1}{2}$ fathom), muddy, small beam trawl, 26.VII.05; 3 ♀ 1 juv.

Curaçao: Rifwater, shallow water, mud, 18.VIII.05; 1 juv.

Distribution: Southern Massachusetts to Brazil, Bermudas, West Africa.

***Metapenæus goodei* Smith.**

? *Penæus pubescens*, Stimpson, Ann. Lyc. Nat. Hist., N. Y., vol. 10, 1871, p. 133.

Parapenæus goodei, Smith, Proc. U. S. Nat. Mus., vol. 8, 1885, p. 176.

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 1 ♀.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 1 ♂ 1 ♀.

Curaçao: Rifwater (lagoon), shallow water (1 fathom), small beam trawl, 26.VII.05; 1 ♀.

Aruba: Boca San Nicolas (lagoon), shallow water, mud, sand, 31.VII.05; 1 ♂ (No. 5).

Aruba: Paarden Bay, 1 fathom, coral rocks, dredge, 3.VIII.05; anterior half of 1 specimen.

Aruba: Lagoon, shallow water, among algæ, small dredge, 8.VIII.05; 1 ♀ 1 juv.

Distribution: North Carolina to Brazil, Bermudas, Bay of Panama.

***Metapenæus mobilispinis* *) sp. nov.**

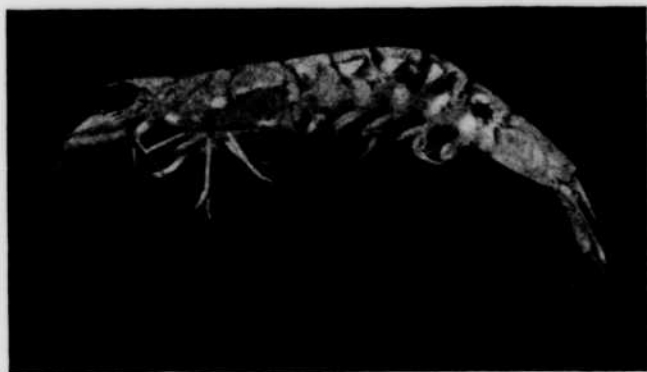


Fig. 1. *Metapenæus mobilispinis*, ♀, side view, $\times 1\frac{1}{2}$.

Type locality, Saba: Cave Round Bay, about 4 fathoms, stony bottom, dredged, 26.VIII.05; 4 ♂ 10 ♀.

*) In allusion to the two movable spines at the extremity of the telson.

Dimensions. Type ♂, length from tip of rostrum to tip of telson 32.4 mM., length of carapace including rostrum 9.5 mM. Largest ♀, length from tip of rostrum to tip of telson 46 mM., length of carapace including rostrum 14.7 mM.

Carapace short-pubescent in front of the cervical suture.

Rostrum ascending, short, not reaching end of eyes; deep, the lower limb as wide as the upper, the latter convex and armed with 5—7 curved teeth. Post-rostral crest continued to the middle of the carapace and armed at the anterior fourth of the carapace

and at the posterior end of the rostrum, with a straight, slender spine.



Fig. 2a. *Metapenaeus mobilispinis* × 40.

Antero-lateral angles of carapace rounded.

Postocular tooth small,

acute. Post-antennular spine long and slender; post-antennular groove deep, meeting the cervical groove. There is a very short, oblique and deeply impressed groove on either side of the rostrum at the anterior border of the gastric region. The branchial region is bordered anteriorly by a sinuous groove (part of the cervical groove), and superiorly by a groove, which is very deep below the hepatic spine, but becomes faint posteriorly and disappears altogether towards the hind region of the carapace.

The fifth and sixth abdominal terga are sharply carinated at the middle; fifth segment a little more than half as long as sixth; sixth a little longer than telson. The telson is considerably shorter than the inner caudal swimmeret and has two slender marginal spines (the posterior the longer) on either side near the middle; extremity cut into three slender spines, the middle one the longest, widening at its middle, the lateral ones very slender and furnished with an articulating extremity.

Eyes very large, not reaching the end of the antennular scale. The outer or upper antennular flagellum is shorter than the inner and this in turn is shorter than the peduncle.

The third maxillipeds reach to middle of last article of antennal peduncle; their dactylus is suboval.

The terminal joints of the fourth and fifth pairs



Fig 2b.
Metapenaeus mobilispinis
× 40.

of thoracic legs are lanceolate; the fifth pair extend to the end of the first third of the antennal scale.

The andricum increases in width distally, is much thickened at the middle, very thin in the terminal third where it forms three lobes on each side, of which the distal one is round, the next one half as wide, the proximal one filiform.

The thelycum is a shallow concavity with uneven surface, bounded laterally by a low curved, smooth ridge; anteriorly a low, median, longitudinal ridge lies between the bases of the fourth pair of legs.

M. goodei Smith of the West Indian region and *M. pubescens* (Stimpson) from St. Thomas, both have a longer rostrum than our species, a spine at the antero-inferior angle of the carapace, the abdominal carina beginning on the second segment. *M. pubescens* I have not seen; it may be identical with *M. goodei*.

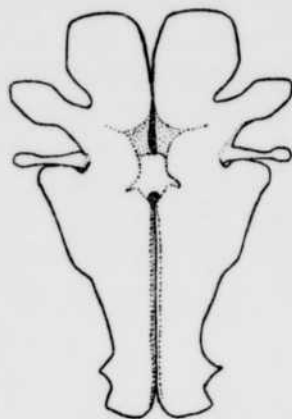


Fig. 2c. *Metapenaeus mobilispinis* $\times 16$.

FAMILY HIPPOLYTIDÆ.

Hippolyte zostericola Smith.

Virbius zostericola, Smith, Rept. U. S. Commr. Fisheries, part I, for 1871-1872 (1873), p. 550 [256], pl. 3, fig. 11.

Bonaire: Lac (lagoon), shallow water, among sponges, 5. VI. 05; 3 specimens.

Distribution: Southern Massachusetts to Louisiana. Bonaire, is an extension of the limits.

Hippolysmata intermedia Kingsley.

Hippolysmata intermedia, Kingsley, Proc. Acad. Nat. Sci. Phila., vol. 30, 1878, p. 90 [2].

Bonaire: Lac (lagoon), shallow water, among sponges, 5. VI. 05; 2 specimens.

Curaçao: Rifwater, shallow water, algæ, dredge, 6. VIII. 05; 2 specimens.

Distribution: Florida Keys to Curaçao; Azores.

Hippolysmata moorei Rathbun.

Hippolysmata moorei, Rathbun, Bull. U. S. Fish. Comm. for 1900, vol. 2, 1901, p. 115, fig. 23.

Bonaire: Lac (lagoon), shallow water, among sponges, 5.VI.05;
1 specimen.

Curaçao: Rifwater, shallow water, algæ, dredge, 6.VIII.05;
1 specimen.

Distribution: Hitherto known only from Portorico.

Thor floridanus Kingsley.

Thor floridanus, Kingsley, Proc. Acad. Nat. Sci. Phila., vol. 30, 1878, p. 95 [7].

Bonaire: Lac (lagoon), shallow water, among sponges, 5.VI.05;
2 ♀ ovig.

Curaçao: Spanish Water (lagoon), shallow water, among corals (Madrepora), 7.VII.05; 2 ♀ ovig.

Curaçao: Schottegat (lagoon), 1 fathom, among horn sponges, 1.XI.05; 1 ♀ ovig.

Distribution: Florida, Gulf of Mexico, St. Thomas, Bonaire and Curaçao extend the range.

Tozeuma carolinense Kingsley.

Tozeuma carolinense, Kingsley, Proc. Acad. Nat. Sci. Phila., vol. 30, 1878, p. 90 [2].

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 1 ♀ ovig.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05;
1 ♀ ovig.

Aruba: Lagoon, shallow water, among algæ, 2.VIII.05; 1 ♀ ovig.

Distribution: North Carolina to Texas, Yucatan, Jamaica and St. Thomas. The two Dutch islands extend the range of the species.

FAMILY PALÆMONIDÆ**Palæmon tenuicornis** Say.

Palæmon tenuicornis, Say, Jour. Acad. Nat. Sci. Phila., vol. 1, 1818, p. 249.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05;
1 ♀ ovig.

Curaçao: Rifwater (lagoon), shallow water, small beam trawl, 28.IX.05; 1 specimen, in seaweed.

Distribution: Banks of Newfoundland to Colombia; Bermudas, Pelagic.

Macrobrachium olfersii Wiegmann.

Palæmon olfersii, Wiegmann, Arch. f. Naturg., Jahrg. 2, Bd. 1, 1836, p. 150.

Bonaire: Playa, $\frac{1}{4}$ fathom, corals, small hand-net, 11.VII.05; 1 specimen.

Curaçao: Rifwater (lagoon); rather shallow water, among algae, 3.IV.05; 1 specimen.

Distribution: West Indies, Vera Cruz, Mexico, to Rio de Janeiro, La Paz, Mexico, to Rio Sabana, Darien, West Africa. In fresh-water streams. Its occurrence in salt water at Bonaire and Curaçao is worthy of note.

Macrobrachium savignyi Bate.

Brachycarpus savignyi, Bate, Challenger Rept., Zool., vol. 24, 1888, p. 795, pl. 129, fig. 4.

Bonaire: lac, among algae, 10.VII.05; 1 ♀ ovig.

Distribution: Bahamas to Curaçao, Bermudas. Marine.

Periclimenes americanus Kingsley.

Anchistia americana, Kingsley, Proc. Acad. Nat. Sci. Phila., vol. 30, 1878, p. 96 [8].

St. Eustatius: Tumble-Down-Dick Bay, 40 fathoms, sandy bottom, small beam trawl, 17.IX.05; 2 specimens.

Aruba: Boca San Nicolas (lagoon), shallow water, mud, sand, 31. VII. 05; 1 specimen (No. 5).

Aruba: Paarden Bay, 1 fathom, coral rocks, dredge, 3.VIII.05; 1 specimen.

Aruba: SE. of the Island, shallow water (1 fathom), small dredge, 3.VIII.05; 2 ♀ ovig.

Distribution: Florida, Gulf of Mexico, Jamaica, St. Thomas, Old Providence, Bermudas.

FAMILY GNATHOPHYLLIDÆ.***Gnathophyllum americanum* Guérin.**

Gnathophyllum americanum, Guérin, in La Sagra's Hist. Cuba, vol. 7, 1857, p. XX, atlas, vol. 8, pl. 2, fig. 14.

Bonaire: Lac (lagoon), shallow water, sandy bottom, corals, 10.VII.05; 1 specimen (No. 7).

Aruba: Boca San Nicolas (lagoon), shallow water, mud, sand, 31.VII.05; 1 ♀ ovig. (No. 5).

Distribution: Gulf of Mexico, Cuba, Porto Rico, St. Thomas, Bermudas, Mauritius, Australia, Tahiti.

FAMILY STENOPIDÆ.***Stenopus hispidus* Olivier.**

Palæmon hispidus, Olivier, Encyc. Méth., Hist. Nat., Insectes, vol. 8, 1811, p. 666, tabl., 1818, pl. 319, fig. 2.

St. Martin: Simson's Bay lagoon, very shallow water, in horn sponges, 3.IX.05; 2 specimens.

St. Martin: Simson's bay lagoon, 1/2 fathom, sandy bottom, in horn sponges, dredge, 7.IX.05; 7 specimens (1514).

Curaçao: Rifwater, shallow water, muddy bottom, dredge, 27.X.05; 1 specimen.

Distribution: Dry Tortugas, Florida, and Bahamas, to St. Lucia and Gulf of Darien, Bermudas, East Indies, South Pacific.

***Stenopus spinosus* Risso.**

Stenopus spinosus, Risso, Hist. Nat. de l'Eur. Mérid., vol. 5, 1826, p. 66, pl. 3, fig. 8.

Stenopus scutellatus, Rakin, Ann. N. Y. Acad. Sci., vol. 11, 1898, p. 242, pl. 29, fig. 3.

St. Martin: Simson's Bay lagoon, shallow water (1/2 fathom), sandy bottom, in horn sponges, dredge, 7.IX.05; 1 specimen (1514).

St. Eustatius: Tumble-Down-Dick Bay, dredged at 30 fathoms, rocky bottom, 17.IX.05; 1 specimen (13).

Distribution: Gulf of Mexico, 24 to 88 fathoms, U. S. Fish Commission Str. *Albatross*, Fernando de Noronha, Brazil, J. E. Branner collector, Bermudas, Mediterranean.

FAMILY PALINURIDÆ.***Palinurus argus* Latreille.**

Palinurus argus, Latreille, Ann. Mus. Hist. Nat. Paris, vol 3, 1804, p. 393.

Saba: Fort Bay, among stones, VIII.05; 1 ♂ adult.

Curaçao: Schottegat (lagoon), shallow water, rocky, stony bottom, among stones, 3.III.05; 1 ♂ 2 ♀, all small.

Curaçao: Schottegat (lagoon), among rocks, 3 IV.05; 1 ♂ juv. (1103).

Curaçao: Schottegat (lagoon), 1 fathom, among horn sponges, 1.XI.05; 1 juv.

Curaçao: Rifwater (lagoon), shallow water, small beam trawl, 4.III.05; 1 juv.

Curaçao: Rifwater, shallow water, dredge, 22.IV.05; 1 ♀ small.

Curaçao: Rifwater, caught in a fish-pot, shallow water, 1 fathom; 1 ♀ small (1533).

Curaçao: Bay of Wacao, among coral rocks (1492, 1498, 1499); 1 ♀ small, 4 juv.

Aruba: lagoon, very shallow water, small dredge, 3.VII.05; 2 juv.

With one exception the specimens are small, the smallest measures 27 mM. long (carapace and abdomen).

Distribution: Bahamas and Florida Keys to Brazil, Bermudas.

***Panulirus inermis* Pocock.**

Panulirus inermis, Pocock, Jour. Linn. Soc. London, Zool., vol. 20, 1890, p. 516.

Aruba: Paarden Bay, 1 fathom, coral rocks, dredge, 3.VIII.05; 1 ♂.

Distribution: San Salvador, Bahamas, surface, taken by electric light by U. S. Fish Commission Str. *Albatross*, Fernando de Noronha, Brazil.

FAMILY SCYLLARIDÆ Lund.***Scyllarides æquinoctialis***

Scyllarus æquinoctialis, Lund, Skrivter af Naturhistorie-Selskabet, Copenhagen, vol. 2, part 2, 1793, p. 21.

St. Martin: Simson's Bay lagoon, shallow water, rocks, 7.IX.05; 1 ♀ (7a).

Distribution: From Florida Keys to Brazil, Bermudas.

FAMILY PORCELLANIDÆ***Petrolisthes galathinus* Bosc.**

Porcellana galathina, Bosc, Hist. Nat. Crust., vol. 1, 1802, p. 233, pl. 6, fig. 2.

Curaçao: Spanish Water (lagoon), shallow water, among corals, (Madrepora), 7.VII.05; 2 specimens.

Curaçao: Cornelis Bay, shallow water, among corals, 18.VII.05; 2 specimens (Nos. 1 & 2).

Distribution: South Carolina to Rio de Janeiro, Brazil, Panama.

***Petrolisthes armatus* Gibbes.**

Porcellana armata, Gibbes, Proc. Amer. Assoc. Adv. Sci., vol. 3, 1850, p. 190 [26].

Curaçao: Spanish water (lagoon), shallow water, among corals (Madrepora), 7.VII.05; 1 specimen.

Curaçao: Cornelis Bay, shallow water, among corals; 18.VII.05; 1 specimen (No. 8).

Curaçao: Fuik Bay (New Port), shallow water, corals, dredge, 18.VII.05; 2 specimens.

Distribution: Florida to Brazil, Bermudas, Indo-Pacific region, Lower California to Peru.

***Petrolisthes magnificus* Gibbes.**

Porcellana magnifica, Gibbes, Proc. Amer. Assoc. Adv. Sci., vol. 3, 1850, p. 191 [27].

Bonaire: lac (lagoon), $\frac{1}{4}$ fathom, sandy bottom, 21.VII.05; 1 specimen.

Curaçao: Spanish Water (lagoon), shallow water, sandy bottom, 18.VII.05; 1 specimen (No. 3).

Distribution: Florida Keys, Vera Cruz, Mexico, Barbados.

FAMILY AXIIDÆ.***Axius gundlachi* von Martens.**

Callianidea gundlachi, von Martens, Arch. f. Naturg., Jahrg. 38, Bd. 1, 1872, p. 132, pl. 5, fig. 15 (not 13).

Curaçao: Harbor of Willemstad, dredge, 30.III.05; 1 ♂.

Curaçao: Harbor of Willemstad, 1 fathom, mud, dredge, 3.IV.05;
1 ♀ ovigerous.

Curaçao: Schottegat (lagoon), shallow water, small dredge,
20.IV.05; 2 ♂.

Chelipeds of ♂ very unequal; of ♀ small and equal.

Distribution: Cuba.

FAMILY CALLIANASSIDÆ.

***Glypturus branneri* Rathbun**



Fig. 3. *Glypturus branneri*, ♂, Schottegat, chelipeds. $\times 4\frac{1}{2}$.

Glypturus branneri, Rathbun, Proc. Washington Acad. Sci.,
vol. 2, 1900, p. 150, pl. 8, figs. 5—8.

Curaçao: Schottegat (lagoon), shallow water, small dredge,
18.III.05; 1 ♂.

Curaçao: Harbor of Willemstad, shallow water (1 fathom), small
dredge, 3.IV.05; 1 ♂.

The ♂ from Schottegat has well developed claws, the larger
claw has more strongly marked teeth on its lower margin than
in smaller specimens, 18 teeth on lower edge of palm.

Distribution: Porto Rico, Brazil.

FAMILY PAGURIDÆ.

? *Sympagurus* sp.

St. Eustatius: Tumble-Down-Dick Bay, 15 fathoms, stony bottom. dredge, 17.IX.05; 1♀ ovigerous, without chelipeds.

***Dardanus venosus* Milne Edwards.**

Pagurus venosus, Milne Edwards, Ann. Sci. Nat., ser. 3, vol. 10, 1848, p. 61.

Dardanus venosus, Verrill, Trans. Conn. Acad. Arts & Sci., vol. 13, 1908, p. 441, text figs. 58, 59, pl. 26, figs. 4a, 5a.

Bonaire: Coral reefs at Paloe-leche, 11.VII.05; 1 specimen. Upper surface of left manus malformed.

Curaçao: Rifwater, 15.IV.05; 1 specimen.

Distribution: Florida to Brazil, Bermudas.

***Calcinus tibicen* Herbst.**

Cancer tibicen, Herbst, Naturg. d. Krabben u. Krebse, vol. 2, 1791, p. 25, pl. 23, fig. 7.

St. Eustatius: West of Oranjestad, 4 fathoms, sandy bottom, small dredge, 17.VIII.05; 1 specimen.

Distribution: Florida Keys to Brazil, Bermudas, Ecuador.

FAMILY CENOBITIDÆ.

***Cenobita clypeatus* Herbst.**

Cancer diogenes, George Edwards, in Catesby, Nat Hist. Carolina, Florida and Bahama Islands, vol. 2, 1771, No. 33. Not.
Cancer diogenes, Linnæus, Sys. Nat., ed. 10, vol. 1, 1758, p. 631.

Cancer clypeatus, Herbst, Naturg. d. Krabben u. Krebse, vol. 2, 1791, p. 22, pl. 23, fig. 2 A & B.

Pagurus diogenes Latreille, Encycl. Méth., Hist. Nat., Insectes, vol. 8, 1811, p. 632, tabl., part 24, 1818, pl. 284, figs. 2, 3, (chelipeds reversed). After Catesby.

Cenobita diogenes, Milne Edwards, Hist. Nat. Crust., vol. 2, 1837, p. 240, pl. 22, figs. 11—13.

My reason for rejecting the current name, *diogenes*, for this species is that neither the description nor the synonymy given

for *Cancer diogenes*, Linnæus, 1758 (*loc. cit.*) fits the species in question. His description is, „*C. macrourus parasiticus, chelis muricatis: dextra majore*”, his synonymy includes (1), „Brown. jam. 424. *Astacus maximus, cauda subnuda molli, chelis subverrucosis tuberculatis: dextra majore*”. This is the so-called *Petrochirus bahamensis* (Herbst); (2) „Rumph. mus. t. 5. f. K. L.” These are according to de Man, respectively *Cænobita clypeatus*, Latreille and *C. spinosus*, Milne Edwards (?); (3) „Catesb. car. 2. t. 34”. This is *Petrochirus bahamensis* (Herbst). In *Cænobita* the left cheliped is the larger, in *Petrochirus* the right is the larger. Therefore the name „*diogenes*” should fall on the *Petrochirus*, to which the remainder of Linnæus’s description is not inapplicable.

St. Eustatius: West of Oranjestad, 1 fathom, sandy bottom, seine, 16.VIII.05; 1 specimen.

Klein-Bonaire: beach, 12.VII.05; 4 specimens.

Curaçao: Fuik Bay (New Port), shallow water, corals, shells, dredge, 18.VII.05; 1 specimen.

Curaçao: on a hill near San Mateo, 100 feet high, coral stone, 10.VIII.05; 1 specimen.

Curaçao: Rifwater, shallow water, near the beach, 11.VIII.05; 1 specimen.

Curaçao: Rifwater, shallow water, mud, algæ, 18.VIII.05; 1 specimen.

Distribution: Florida to Brazil, Bermudas.

FAMILY HIPPIDÆ.

Hippa cubensis Saussure.

Remipes cubensis, Saussure, Rev. et. Mag. Zool., Ser. 2, vol. 9, 1857, p. 503.

Curaçao: Caracas Bay, sandy beach, 23.VI.05; 8 specimens.

Curaçao: Cornelis Bay, sandy beach, 18.VII.05; 8 specimens.

Curaçao: Bay of Wacao, sandy beach, 3—6.X.05; 12 specimens.

Distribution: Florida Keys to Brazil, Bermudas, West Africa and adjacent islands.

FAMILY DROMIDÆ.

Dromia erythropus George Edwards.

Cancer erythropus, George Edwards, in Catesby, Nat. Hist. Carolina, etc., vol. 2, 1771, No. 37.

St. Eustatius: Tumble-Down-Dick Bay, 21.VIII.05; 1 ♂ (1559), medium size.

Distribution: Florida Keys and Bahamas to Brazil.

***Dromidia antillensis* Stimpson.**

Dromidia antillensis, Stimpson, Proc. Acad. Nat. Sci. Phila., vol. 10, 1858, p. 225.

St. Martin: Groote Baai, among stones & algæ, Dr. Shaw coll., VIII.05; 1 ♂. The right hind leg has the last three segments much abbreviated.

Distribution: From North Carolina to Brazil.

FAMILY CALAPPIDÆ.

***Calappa flammea* Herbst.**

Cancer flammeus, Herbst, Naturg. d. Krabben u. Krebse, vol. 2, 1794, p. 161, pl. 40, fig. 2.

St. Martin: Bay of Philipsburg, Dr. Shaw coll, VIII.05; 2 ♂ medium (1439 & 1442).

Bonaire: beach of Klein-Bonaire, corals, hand net, 5.VI.05; 1 ♂ large.

Bonaire: lac (lagoon), shallow water, 7.VI.05; 1 ♂ large.

Curaçao: Piescaderos Bay, very shallow water among stones, 21.VII.05; 1 ♀ small.

Curaçao: Caracas Bay, dredge, 7.X.08; 1 ♀ very large.

Curaçao: Rifwater (lagoon), shallow water, $\frac{1}{2}$ fathom, small beam trawl, 21.X.05; 1 ♂ small.

Aruba: Boca San Nicolas, 31.VII.05; 1 ♂ large, 810a.

In the specimens from Bonaire and St. Martin (1439) the red color forms anastomosing rings on the light background, in the large ones from Curaçao and Aruba the red (on the anterior half of the carapace) is more extensive, forming a background for light-colored spots. One ♂ from St. Martin (1442) has the right claw very much reduced and deformed, granulation is relatively scanty and the fingers have no trace of a basal tooth.

Distribution: North Carolina (and occasionally further north) to Brazil, Bermudas, Cape of Good Hope, probably Indian Ocean.

***Calappa gallus* Herbst.**

Cancer gallus, Herbst, Naturg. d. Krabben u. Krebse, vol 3, part 3, 1803, pp. 18 & 46, pl. 58, fig 1.

St. Martin: Philips Bay, beach, Dr. Shaw coll., VI.05; 1 ♂.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05;
1 ♂ juv.

Distribution: Florida Keys to Bahia, Brazil, Bermudas, West Africa, Red Sea and Persian Gulf, Indian and Pacific Oceans.

FAMILY PORTUNIDÆ.

Portunus (Achelous) spinimanus Latreille.

Portunus spinimanus, Latreille, Nouv. Dict. Hist. Nat. vol. 28, 1819, p. 47.

St. Martin: Bay of Philipsburg, Dr. Shaw collector, VIII.05;
1 ♂, medium size (1436).

St. Martin: Simson's Bay lagoon, 1/2 fathom, small beam trawl,
1 ♂, medium size.

Aruba: lagoon, Paarden Bay, shallow water, sandy, dredge,
15.VI.05; 1 ♂ large.

Distribution: From Virginia to Rio de Janeiro, Bermudas.

Portunus (Achelous) depressifrons Stimpson.

Amphitrite depressifrons, Stimpson, Ann. Lyc. Nat. Hist. N. Y., vol. 7, 1859, p. 58 [12].

Aruba: lagoon, shallow water, among algæ, small dredge,
8.VIII.05; 1 ♀ ovigerous.

Distribution: From North Carolina to Caribbean Sea, Bermudas.

Portunus (Achelous) ordwayi Stimpson.

Achelous ordwayi, Stimpson, Ann. Lyc. Nat. Hist. N. Y., vol. 7, 1860, p. 224 [96].

St. Eustatius: West of Oranjestad; 4 fathoms, sandy bottom, small dredge, 17.VIII.05; 1 ♂ small.

Distribution: Bahamas and Florida Keys to Brazil, Bermudas.

Portunus (Achelous) sebæ Milne Edwards.

Lupea sebæ, Milne Edwards, Hist. Nat. Crust., vol. 1, 1834, p. 455.

Aruba, beach, shallow water, 21.VI.05; 1 ♂ adult.

Curaçao: Rifwater, shallow water, sandy bottom, algæ, 23.VIII.05;
1 ♂ adult.

Distribution: North Carolina to Brazil, Bermudas.

Portunus (Achelous) anceps Saussure.

Lupea anceps, Saussure, Mem. Soc. Phys. Hist. Nat. Genève, vol. 14, 1858, p. 434 [18], pl. 2, fig. 11—11b.

Saba: 10 miles SW. of Saba, rather deep water (15 fathoms), small dredge, 12.VIII.05; 1 ♂ 3 ♀, having the appearance of being partly digested.

St. Eustatius: W. of Oranjestad, 4 fathoms, sandy bottom, small dredge, 17.VIII.05; 1 ♀.

St. Eustatius: near Tumble-Down-Dick Bay, 4—6 fathoms, stony bottom, dredge, 21.VIII.05; 1 ♀ ovig.

SE. of St. Eustatius, 40 fathoms, small dredge, 9.VIII.05; 2 ♀ ovig.

Distribution: Cape Hatteras to Colombia, Bermudas.

Callinectes ornatus Ordway.

Callinectes ornatus, Ordway, Jour. Boston Soc. Nat. Hist., vol. 7, 1863, p. 571.

St. Martin: Simson's Bay lagoon, shallow water, sandy bottom, dredge, 21.IX.05; 1 adult ♀.

St. Eustatius: NW. of Jenkins Bay, dredged at 30 fathoms, 15.VIII.05; 1 ♂ juv.

St. Eustatius: Tumble-Down-Dick Bay, 40 fathoms, sandy bottom, small beam trawl, 17.IX.05; 1 ♂ juv.

Bonaire: Lac (lagoon), very shallow water, stony bottom, VI.05; 1 immature ♀.

Curaçao: Rifwater (lagoon), shallow water (1 fathom), small beam trawl, 26.VII.05; 1 ♂ juv.

Aruba: Paarden Bay, shallow water, 2.VI.05; 1 adult ♂.

Aruba: lagoon, very shallow water, small dredge, 3.VII.05; 1 ♂ juv. (very small).

Distribution: Cape Hatteras to Brazil, Bermudas.

Callinectes marginatus A. Milne Edwards.

Neptunus marginatus, A. Milne Edwards, Arch. Mus. Hist. Nat. Paris, vol. 10, 1861, p. 318, pl. 30, fig. 2.

Curaçao: Rifwater, shallow water, muddy bottom, dredge, 4.IX.05; 1 ♀ ovig.

Aruba: Playa, 2.VII.05; 1 ♂ juv. (Pannekrab).

Distribution: Florida and Bahamas to Brazil, Bermudas, West Africa.

Callinectes exasperatus Gerstæcker.

Lupea exasperata, Gerstæcker, Arch. f. Natur, Jahrg. 22, vol. 1, 1856, p. 129.

St. Martin: Simson's Bay lagoon, shallow water, coral rocks, 7.XI.05; 1 ♀ ovig. (1537).

Distribution: Florida Keys to Brazil.

Arenæus cribrarius Lamarck.

Portunus cribrarius, Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, 1818, p. 259.

Curaçao: Bay of Wacao, shallow water, stony bottom, 6.X.05; 1 ♂ large.

Distribution: New Jersey to Brazil.

Cronius ruber Lamarck.

Portunus ruber, Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, 1818, p. 260.

St. Martin: shore near Philipsburg, Dr. Shaw coll., VI.05; 1 ♀ (1429).

St. Eustatius: West of Oranjestad, 4 fathoms, sandy bottom, small dredge, 17.VIII.05; 1 ♂ juv.

Distribution: South Carolina to Brazil, Acapulco, Mexico to Panama, West Africa.

Cronius tumidulus Stimpson.

Achelous tumidulus, Stimpson, Bull. Mus. Comp. Zool., vol. 2, 1871, p. 149.

St. Eustatius: W. of Oranjestad, 4 fathoms, sandy bottom, small dredge, 17.VIII.05; 1 ♂ 1 ♀.

Curaçao: Rifwater (lagoon), shallow water, algæ, beam trawl, 26.V.05, 1 ♂ 3 ♀ (1 ovig.).

Curaçao: Rifwater (lagoon), shallow water, small beam trawl, 28.IX.05; 1 ♀ ovig.

Aruba: lagoon, shallow water, among algæ, small dredge, 8.VIII.05; 1 ♀.

Distribution: Florida to Brazil, Bermudas.

FAMILY XANTHIDÆ.**Carpilius corallinus** Herbst.

Cancer corallinus, Herbst, Naturg. d. Krabben u. Krebse, vol. 1, 1783, p. 133, pl. 5, fig. 40.

St. Martin: Simson's Bay lagoon, shallow water, 1 fathom, sandy bottom, dredge, 21.IX.05; 1 ♂ adult.

Bonaire: Slagthaai, stony bottom, 1 fathom, dredge, 2.VIII.05; 1 ♀ very large.

Curaçao, among coral reefs; 26.VI.05; 1 ♀ adult.

Distribution: Bahamas to Brazil.

Xanthodius parvulus Fabricius.

Cancer parvulus, Fabricius, Ent. Sys. auct. et emend., vol. 2, 1793, p. 451.

Curaçao: Great Bay, Wacoo, $\frac{1}{2}$ fathom, among algæ, 3.X.05; 1 ♂.

Distribution: Bahamas and Florida reefs to Brazil, Bermudas.

Eurypanopeus depressus Smith.

Panopeus depressus, Smith, Proc. Boston Soc. Nat. Hist., vol. 12, 1869, p. 283.

St. Martin: Simson's Bay lagoon, on horn sponges, shallow water, 7.IX.05; 3 ♂ 4 ♀ (1 ovig.).

Distribution: Massachusetts Bay to Texas. Not before found in the West Indies.

Panopeus herbstii Milne Edwards.

Panopeus herbstii, Milne Edwards, Hist. Nat. Crust., vol. 1, 1834, p. 403.

St. Martin: Philips Bay, Dr. Shaw coll., IV.05; 1 ♀ ovig. (1449).

St. Martin: Simson's Bay lagoon, shallow water, coral rocks, 7.IX.05; 1 ♀ ovig. (1515).

Bonaire: Lac (lagoon), shallow water ($\frac{1}{2}$ fathom), small dredge, mangroves; 1 juv.

Curaçao: Rifwater, shallow water, mud, dredge, 4.IX.05; 1 ♂.

Curaçao: Bay of Caracas, rather shallow water, 3 fathoms, small dredge, 21.X.05; 1 ♀ immature.

Aruba: Paarden Bay, 1 fathom, coral rocks, dredge, 3.VIII.05; 1 juv.

Distribution: Boston, Massachusetts to Brazil, Bermudas.

Panopeus occidentalis Saussure.

Panopeus occidentalis, Saussure, Rev. et Mag. Zool., ser. 2, vol. 9, 1857, p. 502.

St. Martin: Very shallow water, stony bottom, VIII.05; 1 ♀ ovig.

Bonaire: Lac (lagoon), shallow water ($1\frac{1}{2}$ fathom), mangroves, small dredge; 1 ♂ 1 ♀.

Curaçao: Schottegat (lagoon), among pieces of coral (*Madrepora*), 15.IV.05; 1 ♂.

Curaçao: Schottegat (lagoon), 1 fathom, among algæ, 9.VII.05; 1 ♀ juv.

Curaçao: Bay of Caracas, rather shallow water, 3 fathoms, small dredge, 21.X.05; 2 ♂ 1 ♀ ovig.

Distribution: South Carolina to Pernambuco, Bermudas.

***Panopeus bermudensis* Benedict & Rathbun.**

Panopeus bermudensis, Benedict & Rathbun, Proc. U. S. Nat. Mus., vol. 14, 1891, p. 376, pl. 20, fig. 2, pl. 24, figs. 14 & 15.

Curaçao: Rifwater (lagoon), shallow water, small beam trawl, 28.IX.05; 1 ♀ ovig.

Curaçao: Schottegat (lagoon), 1 fathom, among horn sponges, 1.XI.05; 1 ♀.

Aruba: SE. of the Island, shallow water (1 fathom), small dredge, 3.VIII.05; 1 ♂.

Distribution: Florida to Brazil, Bermudas.

***Panopeus boekei* sp. nov.**

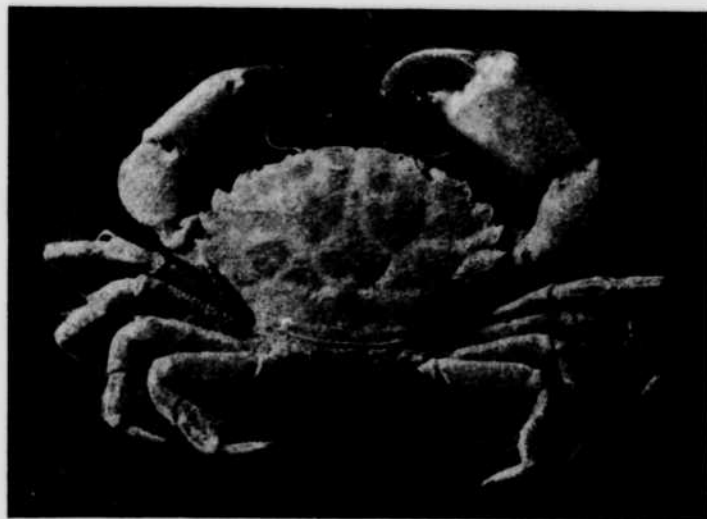


Fig. 4. *Panopeus boekei*, type ♂, dorsal view, $\times 3$.

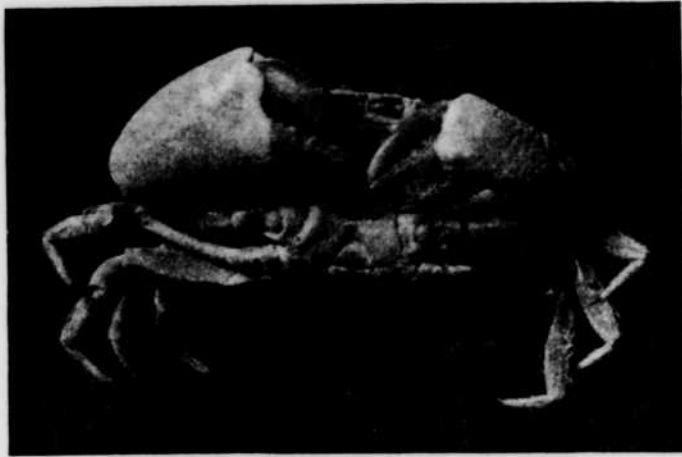


Fig 5. *Panopeus boekei*, type ♂, ventral view, $\times 3$.

Type locality, St. Eustatius: Tumble-Down-Dick Bay, 15 fathoms, dredged, stony bottom, 17.IX.05; 1 ♂ (type) 1 ♀.

Additional localities.

Bonaire: Lagoon, $\frac{1}{2}$ fathom, in mangroves, small dredge; VIII.05; 1 ♂.

Curaçao: Schottegat, in lagoon, 1 fathom, among algæ, 9.VII.05, 2 ♂.

Curaçao: Rifwater, in lagoon, 1 fathom, small beam trawl, 26.VII.05; 1 ♂.

Dimensions: Type ♂, length 8.6 mM., width 13 mM., fronto-orbital width 9.4 mM., front 4.4 mM., Largest ♂ (Schottegat), without chelipeds, length 10.5 mM., width 15.7 mM., fronto-orbital width 11 mM., front 5.2 mM.

Carapace deeply areolated in its anterior two-thirds, the areoles crossed by granulated rugæ: surface finely granulated and covered with scattered hairs of uneven length, giving the crab a ragged appearance; carapace convex in a longitudinal, as well as in a transverse direction, save for the antere-lateral teeth which are thickened and upturned; these teeth, 4 in number, are well separated from one another; the first tooth is short and broad with a margin usually convex, but sometimes (in larger specimens) broken by a slight sinus indicative of the union of the first two of the five teeth which are characteristic of the typical *Panopeid*; second tooth more prominent than the first and equally wide, its posterior margin convex, its anterior straight or slightly concave; its tip blunt-pointed; third tooth similar in shape, but longer, narrower

and thicker; fourth and last tooth narrow, triangular, acute, situated at the widest part of the carapace. Front with a deep, narrow, median emargination forming a rounded lobe on each side, at the outer end of which there is a very small rounded lobe. Across the front runs a transverse raised line fringed with long hair. Preorbital angle prominent, blunt-pointed; lobe between the two upper fissures of the orbit nearly transverse, slightly convex. Lower margin of orbit with a blunt inner tooth, and a V-shaped notch below the outer angle.

Of the six specimens, 5 are right-handed, or have the larger cheliped on the right side; this is much more massive than the smaller cheliped. The difference is greater in the type than in other specimens, even in one of subequal size. Merus short and high, a groove subparallel to distal margin, and behind it a flattened tooth on upper margin; carapace rugose, a distal furrow and a small inner tooth; manus granulate, granules reticulating, upper surface with a shallow groove; fingers with rows of punctæ, a groove on the outside and on the inside of the immovable finger, and a groove near the upper edge of the outer surface of the dactylus; prehensile edges irregularly toothed, one of the larger teeth situated at the base of the dactyl of the larger chela; fingers in this chela gaping moderately; the larger thumb is slightly deflexed, the smaller one considerably so; fingers light brown, the color not extended on the palm.

Ambulatory legs hairy, slender and rather long, the second one longer than the carapace is wide.

Surface of maxillipeds and sternum finely granulate. Abdomen of ♂ reaching to the coxæ of the last legs; third, fourth and fifth segments coalesced, although short depressions indicate suture lines; sixth segment about twice as wide as long, widening distally, seventh segment, broadly triangular.

The ♀ is more convex than the ♂, its fingers are more deeply grooved.

This species in its areolation and prominent lateral teeth resembles *P. bermudensis* Benedict & Rathbun (1) in which the first lateral tooth is larger and the last tooth smaller; the lobes of the front not so rounded nor so deeply separated; tooth larger at base of dactylus of large chela; the male abdomen with fused segment wider at base, penultimate and last segments longer.

(1) Proc. U. S. Nat. Mus., vol. 14, 1891, p. 376, pl. 20, fig. 2; pl. 24, figs. 14, 15.

Ozius reticulatus Desbonne & Schramm.

Lagostoma reticulata, Desbonne & Schramm, Crust. Guadeloupe, 1867, p. 34, pl. 4, fig. 6.

Curaçao: Rifwater, shallow water, muddy bottom, dredge, 23.IX.05; 1 ♂.

Curaçao: Bay of Wacao, sandy beach, 4—5.X.05; 1 ♀ ovig.

Distribution: West Indies, Sabanilla, Colombia.

Pilumnus sayi Rathbun.

Pilumnus sayi, Rathbun, Bull. Lab. Nat. Hist. State Univ. Iowa, vol. 4, 1898, p. 265.

Curaçao: Spanish Water (lagoon), shallow water, among corals (Madrepora), 7.VII.05; 1 ♂.

Distribution: Cape Hatteras, North Carolina, to Rio de Janeiro.

Eriphia gonagra Fabricius.

Cancer gonagra, Fabricius, Sp. Ins., 1781, p. 505.

Aruba: Playa, VII.05; 1 ♀.

Distribution: South Carolina to Brazil, Bermudas.

Melybia thalamita Stimpson.

Melybia thalamita, Stimpson, Bull. Mus. Comp. Zool., vol. 2, 1871, p. 144.

Curaçao: St. Joris Bay, 1 fathom, rocky bottom, dredge, 3.IV.05; 2 ♂.

Distribution: Florida Straits to Aspinwall.

FAMILY GONEPLACIDÆ.**Euryplax nitida** Stimpson.

Euryplax nitidus, Stimpson, Ann. Lyc. Nat. Hist. N. Y., vol. 7, 1859, p. 60.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 1 ♀ ovig.

Aruba: Lagoon, shallow water, among algæ, small dredge, 8.VIII.05; 1 ♀ ovig.

Distribution: Florida, Vieques, St. Thomas.

FAMILY GRAPSIDE.***Goniopsis cruentata* Latreille.**

Grapsus cruentatus, Latreille, Hist. Nat. Crust., vol. 6, 1803, p. 70.

Curaçao; Asiento, lagoon, shallow water, corals, mangroves, 3.IV.05; 1 ♂.

Distribution: Bahamas and Florida Keys to Rio de Janeiro, Bermudas, West Africa, west coast of Nicaragua (Kingsley).

***Geograpsus lividus* Milne Edwards.**

Grapsus lividus, Milne Edwards, Hist. Nat. Crust., vol. 2, 1837, p. 85.

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 1 ♂.

Curaçao: Bay of Caracas, rather shallow water (3 fathoms), small dredge, 21.X.05; 1 ♂.

Curaçao: Bay of Caracas, Maart, 1908; 2 ♂.

Distribution: Florida Keys to Colombia, Lower California to Chile, Clipperton Island, Galapagos Islands.

***Pachygrapsus transversus* Gibbes.**

Grapsus transversus, Gibbes, Proc. Amer. Assoc. Adv. Sci., vol. 3, 1850, p. 181.

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 2 ♂.

Distribution: Bahamas and Florida Keys to Rio de Janeiro, Bermudas, West Africa, Oriental region, Galapagos Islands, California to Peru.

***Sesarma (Holometopus) miersii* Rathbun.**

Sesarma (Holometopus) miersii, Rathbun, Proc. Biol. Soc. Wash., vol. 11, 1897, p. 91.

Aruba, north coast, among corals, beach, 31.VII.05; 1 ♂ juv.

Distribution: Bahamas to Monte Video, Uruguay, Bermudas.

***Aratus pisoni* Milne Edwards.**

Sesarma pisonii, Milne Edwards, Hist. Nat. Crust., vol. 2, 1837, p. 76, pl. 19, figs. 4 & 5.

Curaçao: Harbor of Willemstad, dredge, 30.III.05; 1 ♀.

Distribution: Florida and Bahamas to Brazil, Nicaragua to Peru.

Plagusia depressa Fabricius.

Cancer depressus, Fabricius, Sys. Ent., 1775, p. 406.

Klein Bonaire: among coral rocks (in tide pools), 11.VII.05; 2 ♂ juv.

Curaçao: Schottegat (lagoon), shallow water ($\frac{1}{2}$ fathom), small dredge, 20.VI.05; 1 ♂.

Distribution: Charleston, South Carolina, to Brazil, Bermudas, Mediterranean to St. Helena and South Africa.

Percnon gibbesi Milne Edwards.

Acanthopus gibbesi, Milne Edwards, Ann. Sci. Nat., Zool., ser. 3, vol. 20, 1853, p. 180 (146).

Curaçao: Cornelis Bay, shallow water, among corals, 18.VIII.05; 1 ♂.

Distribution: Bahamas to Brazil, Bermudas, Azores, west coast of Spain to South Africa, Cape St. Lucas to Chile.

Elevated bare patches of carapace narrower and less conspicuous than in *P. planissimum* (Herbst) (1). Various low tubercles, which are so inbedded in the setæ that they scarcely show: a curved row of 5 or 6 on the branchial region at the widest part of the carapace; a row of several just outside of the cervical suture; 2 on each protogastric region.

Width in front (between the antennules) equal to length to sinus at base of posterior spine. 3 Or 4 spinules, smaller than in *planissimum*, within outer margin.

Orbital spinules well-marked, reaching nearer end of outer spine of orbit than in *planissimum*.

Outer margin of second lateral spine shorter than that of first or third.

Groove on upper surface of palm longer than in *planissimum*, reaching between $\frac{1}{3}$ and $\frac{1}{2}$ the length of the palm. Palms swollen in full-grown ♂, equal.

Abdomen of ♂ oblong-triangular, narrower than in *planissimum*, the last two segments suboblong.

FAMILY GEOCARCINIDÆ.**Geocarcinus ruricola** Linnæus.

Cancer ruricola, Linnæus, ed. 10, val. 1, 1758, p. 626.

Aruba: shore, beach, 29.VI.05; 1 old ♂ in fine condition.

(1) *Cancer planissimus*, Herbst, Naturg. d. Krabben u. Krebse, vol. 3, part 4, 1804, p. 3, pl. 59, fig. 3.

Distribution: Bahamas and Florida Keys to West Indies, South America (Guérin).

Cardisoma guanhumi Latreille.

Cardisoma guanhumi, Latreille, Encyc. Méth., Hist. Nat., Insectes, vol. 10, 1825, p. 685.

Aruba: lagoon, 20.VI.05; 435, 1 adult ♂ with claws not fully developed.

Aruba: Boca San Nicolas, 31.VII.05; 809a, 1 old ♂ with claws well developed.

Distribution: Bahamas and Florida Keys to Brazil, Bermudas, West Africa (Bouvier).

FAMILY OCYPODIDÆ.

Ocypode albicans Bosc.

Ocypode albicans, Bosc, Hist. Nat. Crust., vol. 1, 1802, p. 196 pl. 4, fig. 1.

St. Martin: Groote Baai, among stones and algæ, Dr. Shaw coll. VIII.05; 1 ♂ small.

Distribution: Southern New England to Brazil, Bermudas.

Uca pugnax rapax Smith.

Gelasimus rapax, Smith, Trans. Conn. Acad. Sci., vol. 2, 1870, p. 134, pl. 2, fig. 2, pl. 4, fig. 3.

Curaçao: St. Joris Bay, 2 fathoms, stony, dredge, 3.IV.05; 2 ♂ 1 ♀.

Curaçao: Bay of Caracas, 3 fathoms, small dredge, 21.X.05; 1 ♂ 1 ♀, small.

Distribution: Florida Keys to Rio de Janeiro.

FAMILY INACHIDÆ.

Stenorhynchus sagittarius Fabricius.

Cancer sagittarius, Fabricius, Ent. Sys. emend. et. auct., vol. 2, 1793, p. 442 (part).

St. Martin: Simson's Bay lagoon, shallow water, rocky bottom, 7.IX.05; 1 ♂.

Curaçao: Rifwater (lagoon), shallow water, caught in a fish pot, 18.VI.05; 2 ♀ (1 ovig.).

Curaçao: Piescaderos Bay, shallow water, sandy bottom, seine, 21.VI.05; 1 ♂ 1 ♀ ovig.

Distribution: Off Cape Hatteras, North Carolina, to Rio de Janeiro, Bermudas, eastern Atlantic and Mediterranean.

***Podochela macrodera* Stimpson.**

Podochela macrodera, Stimpson, Ann. Lyc. Nat. Hist. N. Y., vol. 7, 1860, p. 196.

St. Martin: Groote Baai, $\frac{1}{2}$ fathom, sandy bottom, dredge, IX.05; 1 ♂ small, soft shell.

St. Eustatius: West of Oranjestad, 4 fathoms, sandy bottom, small dredge, 17.VIII.05; 1 ♂.

Distribution: Bahamas and Florida Keys, West Indies.

***Batrachonotus brasiliensis* Rathbun.**

Batrachonotus brasiliensis, Rathbun, Proc. U. S. Nat. Mus., vol. 17, 1894, p. 54.

Curaçao: Rifwater (lagoon), shallow water, small beam trawl, 28.IX.05; 1 ♂.

Distribution: Porto Rico, off Rio de Janeiro.

***Acanthonyx petiverii* Milne Edwards.**

Acanthonyx petiverii, Milne Edwards, Hist. Nat. Crust., vol. 1, 1834, p. 343.

Klein Bonaire: among coral rocks, in tide pools, 11.VII.05; 2 ♀ (1 ovig.).

Curaçao: Wacao, Great Bay, $\frac{1}{2}$ fathom, among algæ, 3.X.05; 1 ♂.

Distribution: Bahamas to Brazil, Cape St. Lucas to Chile, Galapagos Islands.

***Hemus cristulipes* A. Milne Edwards.**

Hemus cristulipes, A. Milne Edwards, Crust. Mex., 1875, p. 88, pl. 16, fig. 1.

Curaçao: Schottegat (lagoon), Asiento Bay, in horn sponges, shallow water, 3.IV.05; 1 ♀.

Distribution: Gulf of Mexico, Central America, West Indies.

Mithrax spinosissimus Lamarck.

Maia spinosissima, Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, 1818, p. 241.

St. Martin: Bay of Philipsburg, Dr. Shaw, collector, VIII.05; 1 ♀ juv., small size.

St. Martin: Simson's Bay lagoon, shallow water, 3.IX.05; 1 ♀ immature, medium size.

St. Martin: Simson's Bay lagoon, shallow water, sandy bottom, dredge, 21.IX.05; 1 ♂, medium size, soft shell.

Distribution: Bahama Banks, Florida Keys, West Indies.

Mithrax depressus A. Milne Edwards.

Mithrax depressus, A. Milne Edwards, Crust. Mex., 1875, p. 96, pl. 20, fig. 4.

St. Martin: Groote Baai, 1/2 fathom, sandy bottom, dredge, 1.IX.05; 1 ♂ 2 ♀ juv.

St. Martin: Simson's Bay lagoon, shallow water, coral rocks, 7.IX.05; (1536).

Curaçao: St. Joris Bay, 1 fathom, rocky bottom, dredge, 3.IV.05; 2 juv.

Curaçao: Rifwater, dredged at 1 fathom, muddy bottom, 26.VII.05; 1 ♂ (1148).

Curaçao: Rifwater, shallow water, muddy bottom, dredge, 6.IX.05; 1 ♀.

Distribution: Bahamas and Florida Keys to Abrolhos Islands, Brazil, Bermudas.

Mithrax cinctimanus Stimpson.

Mithraculus cinctimanus, Stimpson, Amer. Jour. Sci., vol. 29, 1860, p. 132.

St. Martin: Groote Baai, among stones and algæ, Dr. Shaw coll., VIII.05; 1 ♀ ovig.

St. Martin: Simson's Bay lagoon, shallow water, coral rocks, inside sponges, 7.IX.05; 1 ♂ 1 ♂ ovig. (1515).

Curaçao: Spanish Water (lagoon), shallow water, among corals (*Madrepora*), 7.VII.05; 1 ♂.

Distribution: Florida Reefs, Gulf of Mexico, West Indies.

Mithrax forceps A. Milne Edwards.

Mithraculus forceps, A. Milne Edwards, Crust. Mex., 1875, p. 109, pl. 23, fig. 1.

Curaçao: Fuik Bay (New Port), shallow water, corals, dredge, 18.VII.05; 1 ♂.

Aruba: lagoon, shallow water, among algæ, small dredge, 8.VIII.05; 1 ♀ ovig.

Distribution: North Carolina to Abrolhos Islands, Brazil, Bermudas.

Mithrax sculptus Lamarck.

Maia sculpta, Lamarck, Hist. Nat. Anim. sans Vert., vol. 5, 1818, p. 242.

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 1 ♀.

Aruba: Paarden Bay, 1 fathom, coral rocks, dredge, 3.VIII.05; 1 ♂ 1 juv.

Aruba: lagoon, shallow water, among algæ, small dredge, 8.VIII.05; 1 juv.

Distribution: Bahamas and Florida Keys to Brazil.

Microphrys bicornutus Latreille.

Pisa bicornuta, Latreille, Ency. Méth., Hist. Nat., Insectes, vol. 10, 1825, p. 141.

St. Eustatius: Tumble-Down-Dick Bay, 15 fathoms, stony bottom, dredge, 17.IX.05; 1 ♀ juv. Concealed by a colony of sponges attached to its back.

Curaçao: Schottegat, $\frac{1}{4}$ fathom, muddy bottom, 21.VI.05; 1 ♂.

Curaçao: Schottegat (lagoon), 1 fathom, among algæ, 9.VII.05; 1 ♀ juv.

Distribution: Bahamas and Florida Keys to Brazil, Bermudas.

Macrocoeloma diacanthum A. Milne Edwards.

Pericera diacantha, A. Milne Edwards, Crust. Mex., 1875, p. 57, pl. 15, fig. 3.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 1 ♂.

Distribution: Florida to Brazil.

Pitho aculeata Gibbes.

Hyas aculeata, Gibbes, Proc. Amer. Assoc. Adv. Sci., vol. 3, 1850, p. 171.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 1 ♀.

Aruba: lagoon, shallow water, among algæ, 2.VIII.05; 2 ♂.

Distribution: Florida Keys, Bahamas, West Indies.

Pitho anisodon von Martens.

Othonia anisodon, von Martens, Arch. f. Naturg., Jahrg. 38, Bd. 1, 1872, p. 83, pl. 4, fig. 3.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 1 ♀ immature.

The second lateral tooth is not so much reduced as usual; it is about the size of the first tooth. Both these teeth are smaller on the left side than on the right.

Distribution: Florida to Colombia and Curaçao.

Pitho lherminieri Schramm.

Othonia lherminieri, Schramm, Crust. Guadeloupe, 1867, p. 20.

Curaçao: Wacoo, Great Bay, $\frac{1}{2}$ fathom, among algæ, 3.X.05; 1 ♂.

Distribution: Charleston, South Carolina, to Cape St. Roque, Brazil.

FAMILY PARTHENOPIDÆ.**Parthenope (Platylambrus) serrata** Milne Edwards.

Lambrus serratus, Milne Edwards, Hist. Nat. Crust., vol. 1, 1834, p. 357.

Curaçao: Piescaderos Bay, very shallow water, among stones, 21.VII.05; 1 ♂.

An unusually large and fine specimen, measuring 26 mM. long and 37.5 mM. wide.

Distribution: North Carolina to Bahia, Brazil, Bermudas.

ORDER STOMATOPODA.**Odontodactylus havanensis** Bigelow.

Gonodactylus havanensis, Bigelow, Johns Hopkins Univ. Circ., No. 106, 1893, p. 101.

Curaçao: Piescadera Bay, small dredge, 20.III.05; 1 ♂.

This specimen is very much larger than the type, measuring 54 mM. from tip of rostrum to tip of submedian spines of telson. Angles of carapace produced, the anterior angles forward and outward, the posterior angles chiefly outward. The dactylus of the raptorial claw on the left side bears 6 spines besides the terminal one; that on the right side bears five spines, the one next the proximal spine has a spinule at its base. The telson has a submarginal as well as a marginal carina on the surface of the lateral and intermediate spines; a dorsal carina on the submedian spines; a short carina between the submedian and intermediate spines. The endopodites of the first abdominal appendages are provided with clasping organs.

Distribution: New Providence, Bahamas, surface, by electric light, U. S. Fish Commission Str. *Albatross* (young), off Havana, Cuba, 163 fathoms, *Albatross* (type locality), Campeche Banks, Mexico, taken out of a Red Snapper by Joseph Lee. One specimen from each of these three localities is in the U. S. National Museum.

***Pseudosquilla ciliata* Fabricius.**

Squilla ciliata, Fabricius, Ent. Syst., vol. 2, 1793, p. 512.

St. Eustatius: South side Bay, very shallow water, seine, 16.VIII.05; 1 specimen.

St. Eustatius: Harbor of Oranjestad, 4 fathoms, sandy bottom, with algæ, dredge, 17.VIII.05; 1 specimen.

St. Eustatius: West of Oranjestad, 4 fathoms, sandy, small dredge, 17.VIII.05; 3 specimens.

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 1 specimen.

Curaçao: Rifwater, shallow water, muddy bottom, algæ, dredge, 6.IV.05; 1 specimen (largest one taken).

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 3 specimens.

Curaçao: Rifwater, shallow water, algæ, mud, small beam trawl, 26.VII.05; 1 specimen.

Curaçao: Rifwater (lagoon), shallow water, small beam trawl, 28.IX.05; 2 specimens.

Curaçao: Bay of Wacao, shallow water, algæ, dredge, 5.X.05; 4 specimens.

Aruba: SE. of the Island, 1 fathom, small dredge, 3.VIII.05; 1 specimen.

Aruba: Paarden Bay, 1 fathom, coral rocks, dredge, 3.VIII.05; 1 specimen.

Distribution: Bahamas and Florida Keys to Cape St. Roque, Brazil, 20 fathoms, U. S. Fish Commission Str. *Albatross*; islands of the Pacific.

***Pseudosquilla monodactyla* A. Milne Edwards.**

Squilla monodactyla A. Milne Edwards, Bull. Soc. Philom. Paris, ser. 7, vol. 2, 1878, p. 232.

Pseudosquilla monodactyla Miers, Ann. Mag. Nat. Hist., ser. 5, vol. 5, 1880, p. 110, pl. 3, figs. 1 & 2.

Aruba: lagoon, shallow water, among algæ, 2.VIII.05, 2 specimens.

Distribution: Old Providence, Caribbean Sea, U. S. Fish Commission Str. *Albatross*, Aruba, Cape Verde Islands.

***Gonodactylus ørstedii* Hansen.**

Gonodactylus ørstedii, Hansen, Isopoden, Cumaceen und Stomatopoden, Ergebnisse der Plankton-Expedition der Humboldt-Stiftung, Bd. 2, G. c. 1895, p. 65.

St. Eustatius, Tumble-Down-Dick Bay, 15 fathoms, stony bottom, dredge, 17.IX.05; 2 juv.

Bonaire: Lac (lagoon), shallow water, sand and mud, dredge, 10.VII.05; 1 specimen.

Curaçao: Rifwater, $\frac{1}{2}$ fathom, dredge, 6.III.05; 2 specimens.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 26.V.05; 1 juv.

Curaçao: Rifwater, shallow water, muddy bottom, dredge, 23.IX.05; 2 specimens.

Curaçao: Schottegat (lagoon), shallow water, among algæ, dredge, 22.IX.05; 1 specimen.

Curaçao: Bay of Wacao, shallow water, among algæ, dredge, 3.X.05; 1 specimen.

Aruba: north coast, beach, among corals, 31.VII.05; 1 specimen.

In the largest specimen (Bay of Wacao) the three carinæ of the telson are very much swollen, almost touching each other.

Distribution: North Carolina to Brazil, Bermudas.

Explanation of figures.

- Fig. 1. *Metapenæus mobilispinis*, ♀, side view, $\times 1\frac{1}{2}$.
- " 2. *Metapenæus mobilispinis*, a. rostrum, side view, $\times 10$;
b. telson, dorsal view, $\times 10$; c. andricum, ventral
view, $\times 16$.
- " 3. *Glypturus branneri*, ♂, Schottegat, chelipeds, $\times 1\frac{1}{2}$.
- " 4. *Panopeus boekei*, type ♂, dorsal view, $\times 3$.
- " 5. *Panopeus boekei*, type ♂, ventral view, $\times 3$.
-

Isopod Crustaceans of the Dutch West Indies.

By HARRIET RICHARDSON,

Collaborator, United States National Museum.

FAMILY EGIDÆ.

Ega ecarinata Richardson.

Ega ecarinata, Richardson, Proc. Biol. Soc. Washington, vol. 12, 1898, p. 39; Bull. U. S. Nat. Mus., No. 54, 1905, p. 171, figs. 151—153.

Curaçao: Rifwater, shallow water, algæ, beam trawl, one specimen.

FAMILY CYMOTHOIDÆ.

Cymothoa œstrum Linnæus.

Oniscus œstrum, Linnæus, Syst. Nat., ed. 10, vol. 1, 1758, p. 636; Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, p. 254, figs. 263, 264.

Curaçao: From a *Stolophorus*, sp?, caught by fishermen, 1 ♂ 1 ♀.

FAMILY SPHEROMIDÆ.

Paracerceis caudata Say.

Næsa caudata, Say, Jour. Acad. Nat. Sci. Phila., vol. 1, 1818, p. 482.

Cilicæa caudata, Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, p. 314, figs. 343—348.

Paracerceis caudata, Hansen, Quar. Jour. Micr. Sci., N. S., vol. 49, 1905, p. 69; Richardson, Bull. U. S. Nat. Mus., No. 54, 1905, p. IX.

St. Martin: Groote Baai, $\frac{1}{2}$ fathom, sandy bottom, dredge, 4 specimens.

Curaçao: Rifwater, shallow water, algæ, beam trawl, 1 specimen.

CONTENTS.

	page
Part I. West Indian Fishes	3
Fishes, recorded by Cope from St. Martin and not found by us	174
List of vernacular names	175
Part II. West African Fishes.	181
List of new species	300
Literature	301
General Index	305
Stalk-eyed Crustaceans	317
Isopod Crustaceans	350



